The OIL AND GAS JOURNAL

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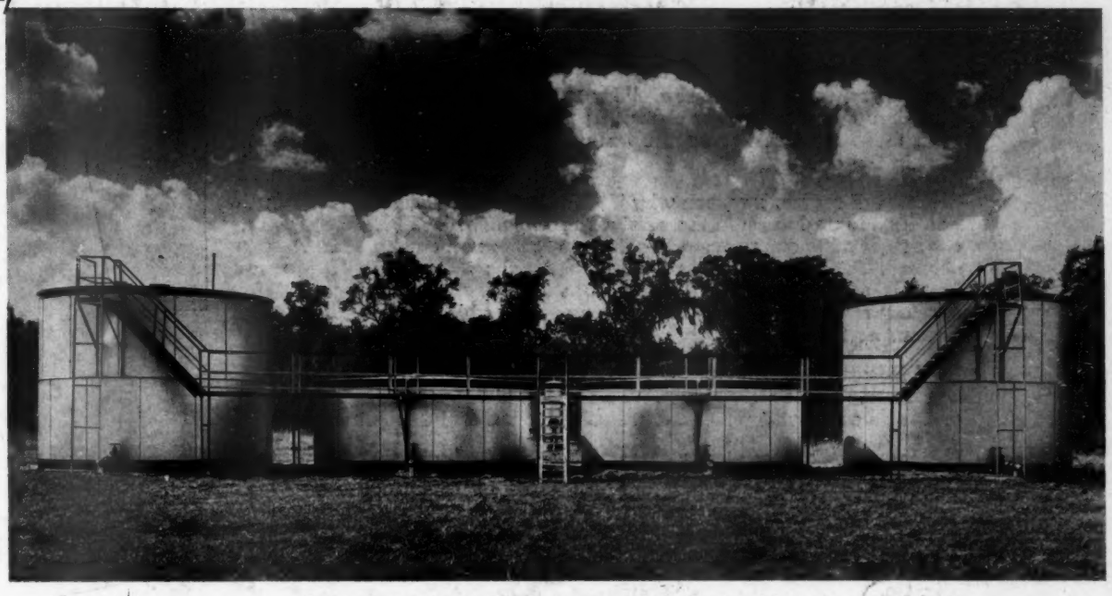

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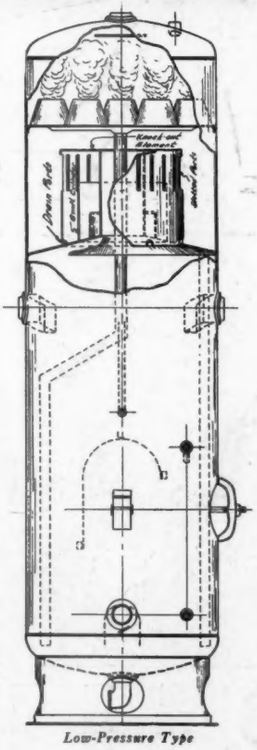

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MALONEY SEPARATORS OFFER 4 OUTSTANDING IMPROVEMENTS

The growing demand for MALONEY Oil and Gas Separators is based on their ability to provide *unusually high efficiencies.* These extra-high efficiencies are the result of 4 outstanding improvements, consisting of:

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2 —*Improved Knock-Out Element,* consisting of 3 cylinders, performs with higher efficiency the separation of the heavy ends or oils from the gas.

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4 —*Improved Mechanical Details,* including Valves with full-area passages, and forged steel Boiler-Type Manholes, machined for gasket seat.

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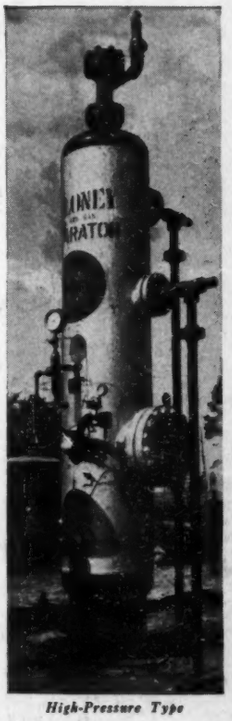

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. . . for Rotary Drilling Lines, Sucker Rod and Tubing Lines

The next time you need Rotary Drilling lines, Sucker Rod or Tubing lines — you can assure a saving by specifying pre-formed rope instead of ordinary fabrication. For although pre-formed has a higher initial cost, — in these services it stands up much longer, thus costs substantially less, in the end.

There is, of course, a reason why UNION-formed (our superior pre-formed line) stands up longer in the services mentioned. Lines in these services are subjected to extra-severe bending stresses, drum crushing, and tensile stresses. This is in large measure offset by the fact that UNION-formed Rope is of pre-formed, stress-free construction. Containing no in-built, constant stresses, it is far better prepared to withstand severe stresses encountered in service.

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Photograph below was taken at a well south of St. Louis, Okla., drilled by Hissom Drilling Co., of Tulsa. Left to right, the men are: W. B. Hissom, contractor; L. P. Nixon, Union Wire Rope Corp.; A. M. Ballard and Dan Wallace, lease owners; A. W. Tillotson, geologist; W. H. Pratt, floor man; Buddy Sexton, derrick man; George Larkin, engine man; H. L. Eley, driller; Dave Evans, tool pusher; Charles Johnson and J. B. Blankenship, Jarecki Mfg. Co.

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Improper handling will greatly shorten a rope's life. Never pull rope over the side of a stationary reel, as every loop pulled from the reel will either put in a twist or take out a twist in the rope. This produces a kinky, curly rope and frequently results in "dog legs." Reel should be mounted on a horizontal bar or turntable, and rotated to pay off rope.

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The "ULTIMATE LOW COST WIRE ROPE"

The Oil and Gas Journal

PUBLISHED WEEKLY BY THE PETROLEUM PUBLISHING COMPANY AT TULSA, OKLAHOMA

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Table of Contents

Vol. 37, No. 32 — December 22, 1938

News Developments

Summary 7
Diesel Fuel Used in Various Services ..... *W. T. Ziegenhain* 8
Sparks From the News 10
Interstate Compact Supported by Incoming Governors ..... *D. H. Stormont* 11
I.P.A.A. Committee to Continue Studies ..... *D. H. Stormont* 12
Californian Plan to Cut Production 600,000 Bbls. ..... *L. P. Stockman* 13
Colombia to Witness Active Drilling Campaign in 1939 ..... *C. O. Willson* 14
Cooperation Is the Solution of Oil Problems, Kansans Told ..... *Dal Dalrymple* 17
Editorial: Forum Found 18
Cartoon 19
Programs and Meetings 20
News From State Capitals 21
Pipe Line Activity 22
Natural Gas News 22
Natural Gasoline 23
Refinery Projects 23
Bureau of Mines Estimate for January 24
Obituaries 24
Monopoly Probe Seeking Facts, Not Prosecutions ..... *Henry D. Ralph* 27
International News 28
Government Figures Show Favorable Gasoline Consumption Trend 98

Engineering—Operating

Magnolia Completes Large Salt Water Disposal Project ..... *Paul Reed* 30
Safety—While Elevating Drill Pipe 37
Metal Progress ..... *W. L. Nelson* 39
Operating Ideas 40
Stratigraphic Versus Structural Prospecting for Oil ..... *E. E. Rosaire* 43
Questions on Technology ..... *C. K. Francis, Ph.D.* 60
Problems From Readers ..... *L. G. E. Bignell* 62

Field Operations

Field Operations Summarized 65
Illinois-Kentucky-Ohio 66
Southwest Texas ..... *F. L. Singleton* 68
West and Central Texas and Panhandle ..... *D. H. Stormont* 69
Among Drilling Contractors 70
Eastern Fields ..... *Staff Correspondent* 72
Kansas ..... *Dal Dalrymple* 73
Oklahoma ..... *Dal Dalrymple* 75
California ..... *L. P. Stockman* 77
North and East Texas ..... *D. H. Stormont* 79
Gulf Coast ..... *Nell Williams* 81
Rocky Mountain Area ..... *T. R. Ingram* 83
Louisiana and Arkansas ..... *George Weber* 87
Michigan ..... *Otto C. Pressprich* 88
Canada ..... *Victor Lauriston* 89

Key to Abbreviations 91
Wildcats 91

Markets and Prices

Crude Prices 78-106
Group 3 Market ..... *T. F. Smiley* 102
A.P.I. Refinery Report 103
New York Market ..... *H. Stanley Norman* 103
Tank-Wagon Market 104
Refinery Prices 105

Additional Features

Record of Oil Securities 99
Personal Paragraphs 100
Equipment News 107
Classified Advertising 110
Advertisers' Index 112

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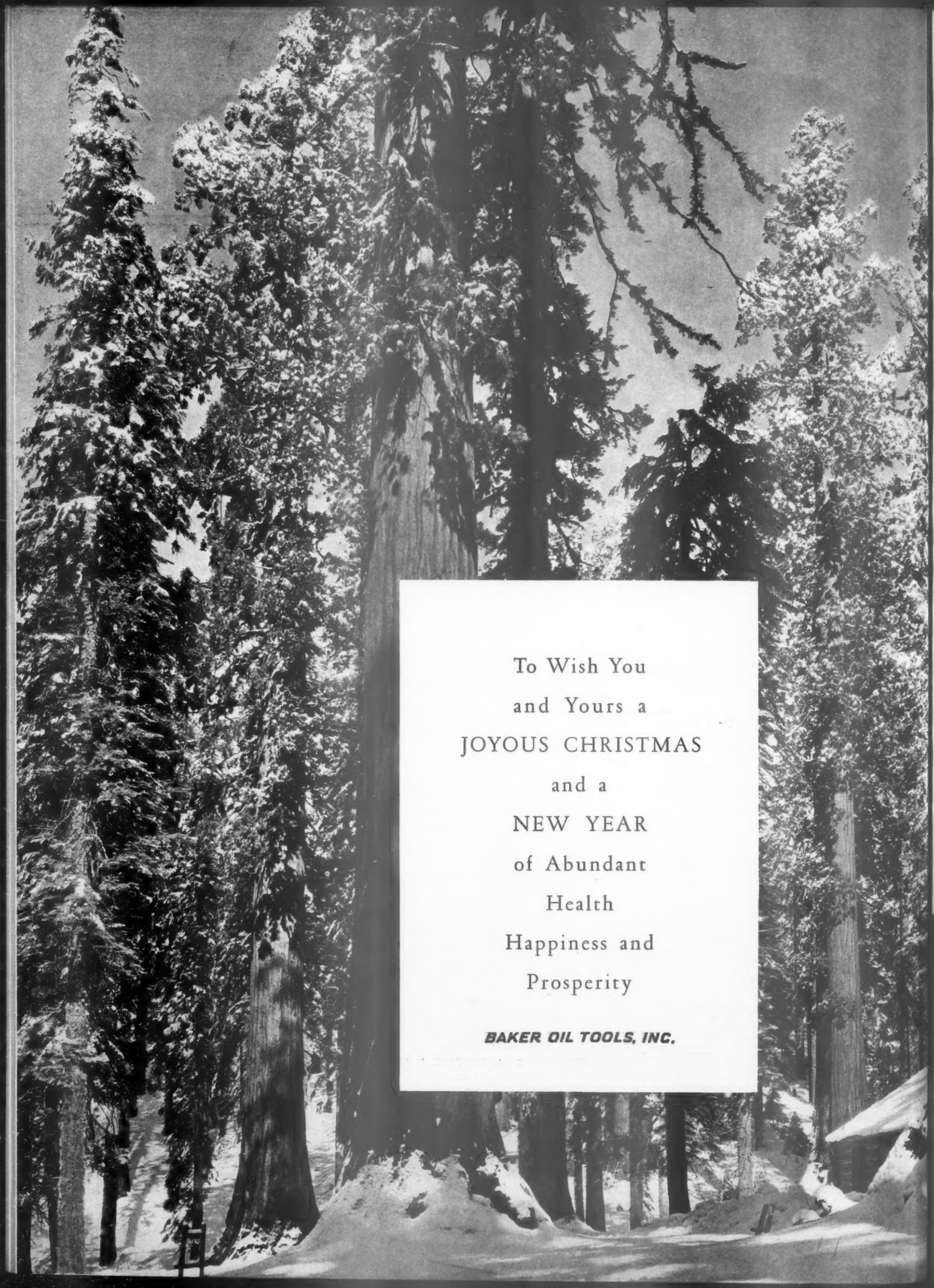
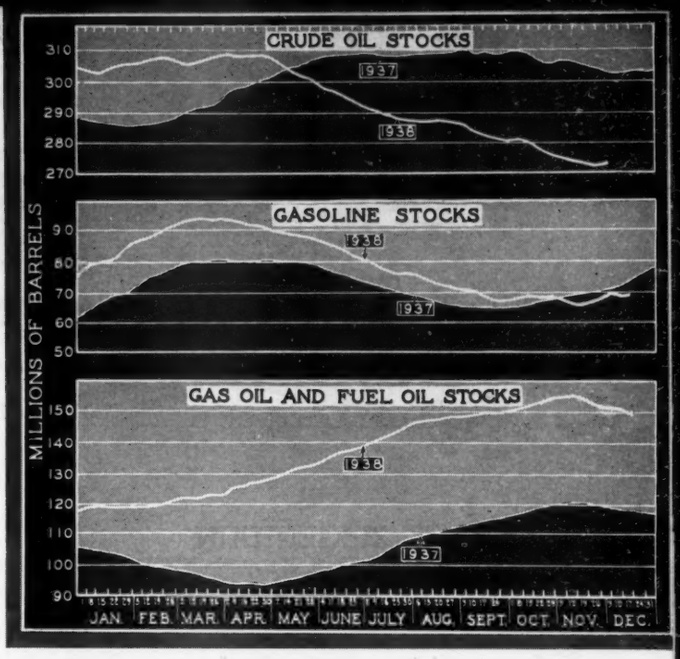

To Wish You
and Yours a
JOYOUS CHRISTMAS
and a
NEW YEAR
of Abundant
Health
Happiness and
Prosperity
BAKER OIL TOOLS, INC.

Trends

Price-Cut in Michigan; Coal-Basin Discoveries; Uneasy Refined Markets



STEADILY increasing crude oil production in Illinois; a 14-cent reduction in price of crude in most of the Michigan fields; important pool discoveries in Indiana, Illinois and Arkansas, and the decision of the Railroad Commission of Texas to continue the Saturday and Sunday shutdowns in Texas through January, February and March were outstanding features of the past week in the oil industry.

CRUDE PRODUCTION *3,274,566 barrels daily average—up 31,483. One year ago 3,443,840 barrels.*

CRUDE STOCKS *271,065,000 barrels as of December 3—up 502,000. One year ago 303,034,000 barrels.*

GASOLINE STOCKS *69,635,000 barrels as of December 17—up 1,048,000. One year ago 74,117,000 barrels.*

GAS AND FUEL OIL STOCKS *148,573,000 barrels as of December 17—down 2,206,000. One year ago 118,711,000.*

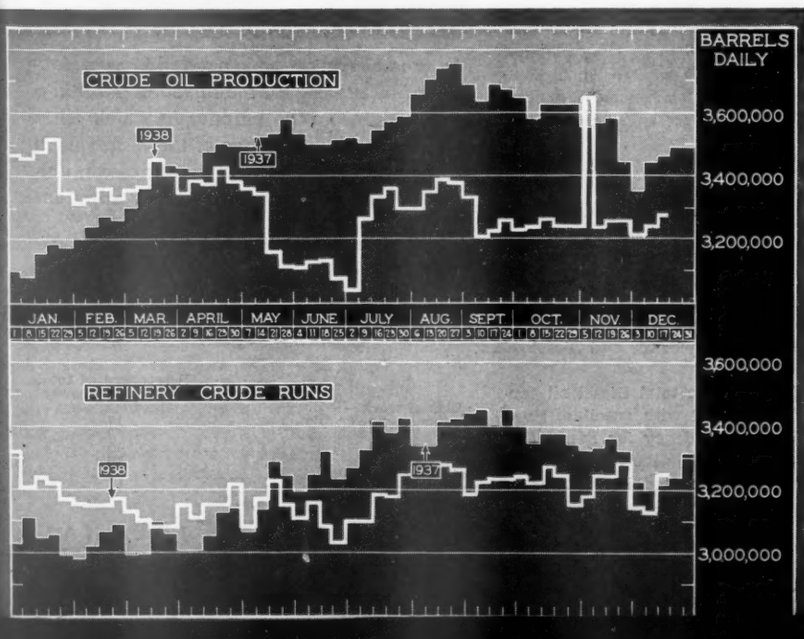
REFINERY RUNS *3,245,000 barrels daily week ending December 17—up 95,000. One year ago 3,220,000 barrels.*

The cut in the prices of oil in Michigan, which affected all but the West Branch, Arenac and Allegan fields, was attributed to the fact that producers in the Bloomingdale field in Van Buren County, were selling oil for 60 cents per barrel to refiners who were in direct competition with Mid-Michigan refiners paying a much higher price in Central Michigan fields. Monday's price cuts were the second reduction made in Michigan since October 12.

The discovery of production in Devonian lime in the 30-year-old Sandoval field in Marion County, Illinois, the discovery well estimated to be good for 400 bbls. per day flush production, has serious possibilities in a state where there is no legal restriction on the quantity of oil that may be produced. Devonian lime underlies much if not all of the Central basin producing area, and offers a temptation to every operator to drill below the McClosky lime in order to determine whether or not the Devonian will produce. The discovery, together with the steadily rising production of the state, imperils the Illinois price structure.

In a remote corner of Gibson County, Indiana, a McClosky lime wildcat found what is estimated to be a 400-bbl. flush production, which will undoubtedly lead to development on a considerable scale. Another interesting prospect is reported from nonproducing Christian County, in western Kentucky, where an old abandoned well was cleaned out and tested after the modern fashion, with resultant showings of oil in the Jett sand, and prospects of oil in the McClosky lime. A Smackover lime pool was opened in Columbia County, Arkansas.

Unsettled conditions prevail in the refinery market throughout most areas. A definite movement in the direction of higher octane ratings for motor fuels is gaining ground; but notwithstanding the added costs which it involves and the fact that consumption continues at an unusually high level, tankcar gasoline prices declined in Mid-Continent territory in the past week. Stocks of light fuels and kerosene, moving slowly on account of mild temperatures, reached burdensome proportions in interior areas, and concessions granted by refiners in pressing need of outlets brought about a general reduction in quotations. On the East Coast, however, the market for such material stiffened slightly. Gasoline also was a little steadier in that district. Natural gasoline went to another high for the year, and business is reported booked unusually far ahead.



DAILY AVERAGE PRODUCTION FOR WEEK

	Dec. 17, 1938	Bur. Mines Dec. est. of demand	Dec. state allowable	Dec. 10, 1938
Fitts	35,425	.....	.....	32,450
Oklahoma City	106,500	.....	.....	91,800
Remainder of state	300,450	.....	.....	301,625
Total Oklahoma	442,375	500,700	428,000	425,875
East Texas	371,598	.....	.....	371,396
West Texas	199,948	.....	.....	199,347
North Central Texas	106,596	.....	.....	104,048
Texas Panhandle	60,047	.....	.....	66,900
East Central Texas	88,052	.....	.....	88,550
Gulf Coast Texas	338,600	.....	.....	337,550
Southwest Texas	101,300	.....	.....	100,898
Total Texas	1,266,141	1,343,900	1,294,577	1,268,689
North Louisiana	69,705	.....	.....	75,990
Gulf Coast Louisiana	189,698	.....	.....	183,100
Total Louisiana	259,403	248,000	247,580	259,090
California	671,750	589,700	610,000	663,100
Kansas	153,525	159,000	163,400	147,800
Arkansas	50,660	51,600	52,000	49,630
Eastern fields	92,150	97,100	.....	91,750
Illinois	119,815	71,900	.....	115,877
Michigan	49,647	51,000	.....	51,882
New Mexico	98,160	100,300	98,285	98,150
Rocky Mountain area	70,940	92,600	.....	71,240
Total United States	3,274,566	3,305,800	.....	3,243,083

Largest Diesel-electric train ever built starts schedule this week. The locomotive is 210 feet long and weighs 900,000 pounds

Diesel Variety

By W. T. ZIEGENHAIN

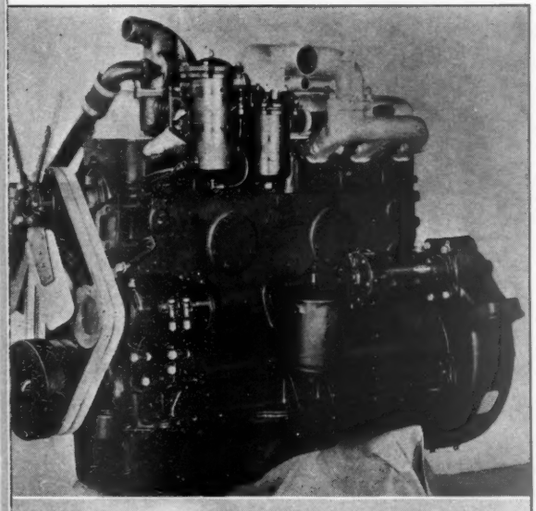
With persistent regularity since its first successful operation in 1897 the Diesel engine has been able to record refinements that have greatly expanded its application. Starting as a complicated, heavy, inflexible affair in 1892, it almost killed its inventor that year. Gaining experience from the accident the inventor designed and constructed a stronger engine which proved successful five years later, but he was not given general recognition in the United States until 1912 when he delivered a paper here before the American Society of Mechanical Engineers in which he said "The Diesel engine will double the resources of mankind as regards power production. No where in the world are the possibilities for this prime mover as great as in this country". Thus the inventor correlated the possibilities of his engine with the oil-producing possibilities of the United States and predicted a bright future for both.

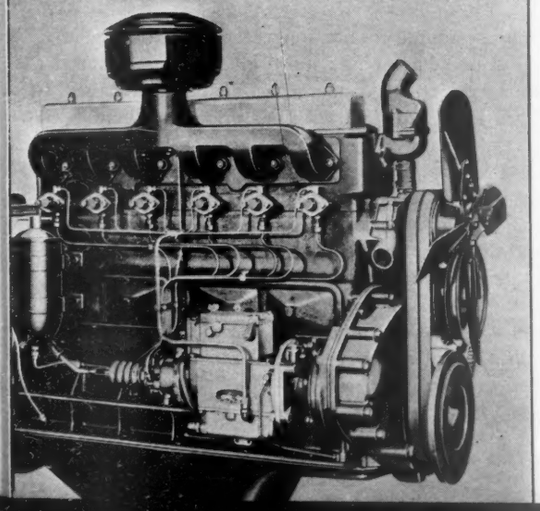
He might have offered more concrete evidence of that faith in American applications of the Diesel if he had not been removed from public life through some mysterious means as he was crossing the English Channel just prior to the World War. He disappeared along with many engineering drawings and the act was never satisfactorily explained as voluntary or involuntary.

Almost as mysteriously as its inventor's disappearance the story of the great future possibilities of the Diesel engine began to develop. Yet, these ideas never were strongly championed or condemned. To some the Diesel was looked upon as able to satisfy all future power problems. Others contended it was too heavy and inflexible to be used anywhere but on constant and heavy loads. While the word "Diesel" was being worked over American automotive engineers were quietly but rapidly adopting the gasoline engine as the means for propelling the mounting demand of passenger cars. Later the aviation industry adopted the gasoline motor for its general use almost exclusively.

As a consequence, during the period from 1912 to date the needs of the gasoline motor have dominated the procedure for refining crude oil and have been the predominating factor to multiply the consumption of crude oil. With gasoline having served the automotive industry so well in the past it is only natural that a cautious attitude be taken whenever the suggestion is presented that Diesel engines be substituted for gasoline engines for automotive use. However, it is also disquieting when one views this year's offerings in truck engines.

Typical Diesel motors made available this year for installation in new-model trucks. Their general appearance follows the lines of the ordinary gasoline motor





Diesels for Trucks

For a period of 8 to 10 years many large truck and engine manufacturers have been quietly perfecting Diesel motors for truck service. This year, three of them have announced Diesel-engine equipped trucks of varying capacity for national distribution. Such companies as General Motors, Dodge, Mack, International Harvester, Cummins Diesel and Superior Engine are associated in this work.

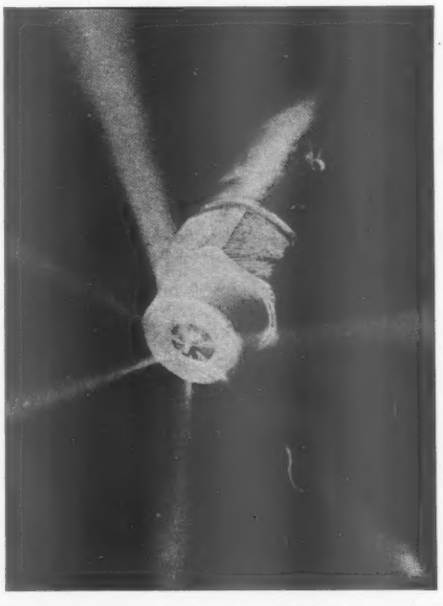
It is also only natural that the question be raised as to what effect these trucks may have upon the relationship which has existed between gasoline consumption and Diesel fuel consumption. In simplest form, the question might be answered by saying "very slight".

However, this year is but the start of what could easily prove to be a decidedly important shift in the relationship between gasoline and Diesel oil consumption.

At present, of course, the total Diesel oil consumption is small compared with gasoline. However, there is a distinct tendency for Diesel fuel requirements to mount at a relatively fast pace. In the past ten years the combined horsepower of new Diesel engines sold has gone up 600 per cent and in 1939 will probably reach 2,500,000 horsepower. This includes Diesel engines in all types of service however, such as for tractors, marine, power plants, and many uses which are not classified.

Division of Power

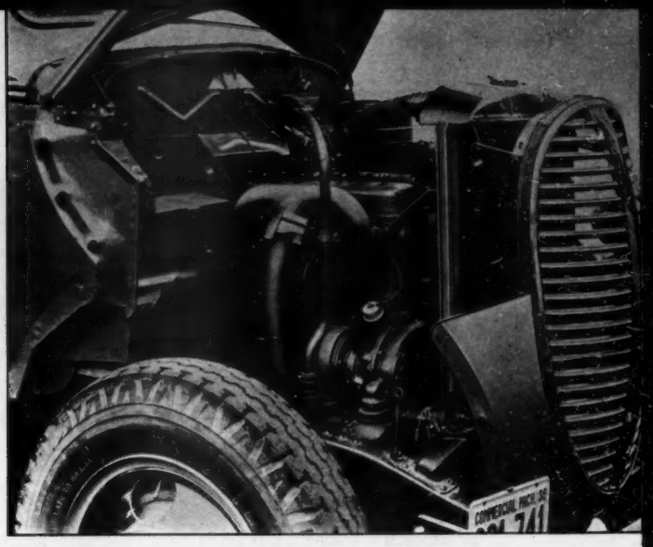
For comparison, the 1939 sale of new automobiles will probably reach 3,200,000 units and assuming an average brake-horsepower per car of 85 and mindful that all of these will be equipped with gasoline engines, the power to be created next year approximates 272,000,000 horsepower or more than 100 times as much new gasoline power in the form of automobile engines than all of the Diesel power combined. It should also be pointed out here that in the list of Diesel sales tractors take top rank, the break-up of Diesel sales at present based upon horsepower approximating the following:



The greatest precision is needed in manufacturing fuel nozzles for the injection of oil into Diesel engines. The manner in which oil is vaporized to a fog by one of these nozzles is shown here. The need for a very clean, uniform oil for Diesel service becomes apparent

Clas of work—	Percentage of total Diesel horsepower sold for year
Stationary power plants	17
Marine	8
Tractors	45
Tucks and buses	10
Railroads	3
Unclassified	15

Fuel Used in of Services



Standard Diesel motor replacing engine in Ford truck. No change in the exterior appearance is made so the layman no longer may feel sure whether a truck is driven by a gasoline or Diesel engine

As a result of introducting this year standard Diesel-powered trucks for general, industrial use the prediction is being made that a major shift in the above percentage figures will occur over the next five years. As a result of the favorable impression given Diesels following the New York truck show the accepted prediction there was that within five years every bus in the United States will be equipped with Diesel motors and a large share of the trucks will be equipped with these engines.

Offer Small Sizes

This is probably based upon the fact American manufacturers are offering Diesel powered trucks and engines of relatively small capacities and these fit into the normal needs of a large number of truck operators. These trucks range in capacity from 2½ to 15 tons and it is becoming common practice to offer "package replacements units" which will take the place of the standard gasoline engine in the ordinary trucks. It is also becoming common practice to offer a variety of Diesel engine combination units capable of utilizing a variety of fuels. In one instance the motor is designed and is equipped to permit burning Diesel oil, gasoline, butane, propane and even coke gas. This combination, of course, requires the use of an ignition system.

There is also a trend toward using relatively low Diesel engine compression ratios. Instead of the 16 to 1 compression ratio which has been commonly referred to as the Diesel ratio for auto-ignition, the newest line of trucks to be announced utilizes a 14.5 to 1 ratio. This is a 6 cylinder, 4 cycle motor and may be considered typical of the new Diesels being offered for truck use.

The Diesel fuel specifications recommended for this engine follows:

TYPICAL DIESEL FUEL SPECIFICATIONS

Cetane number	45 minimum
Viscosity at 100° F. (Saybolt)	35 sec. minimum, 40 to 50 sec. preferred
Sulfur (by weight)	1.00% minimum
Ash content	0.02% maximum
Conradson carbon residue	0.20% maximum
Moisture and sediment (by volume)	0.05% maximum
Pour temperature	Below minimum air temperature where vehicle operates
Flash point (for safety only)	150° F. minimum

A large Diesel engine manufacturer that supplies engines for a new complete line of trucks comments when approached for a statement regarding the specifications on the fuels needed for his engines as follows, "The type of oil used is No. 2 furnace oil, 45 to 60 cetane number. The average oil available is 55 cetane number. This is not generally available at filling stations but is usually purchased by the operator by the barrel. The consumption of the average Diesel-powered truck under load is 100 ton miles per gallon." A third Diesel engine manufacturer submits the following specifications for the fuel to be used in the Diesel engines he is offering this year for truck use:

DIESEL FUEL OIL SPECIFICATIONS GRADE NO. 1-D OR AS FOLLOWS:

We recommend that chemically neutral, distillate, petroleum fuel oil of the following characteristics be used in our Diesel engines:

Viscosity at 100° F.	Minimum 35 sec.
Saybolt Universal (preferably 40 to 70)	Maximum 100 sec.
Sulfur (by weight)	Maximum 1.5%
Carbon residue (per cent by weight)	Maximum 0.2%
Ash content	Maximum .02%
Moisture and sediment (B.S.&W.)— per cent by volume	Maximum .05%
Flash—115 minimum or legal (as may be required for insurance purposes, usually	Minimum 150° F.
Pourpoint at least 10° less than lowest temperature where engine operates.	
Ignition and burning qualities to be equal to:	No. 1-D
Cetane number, min.	45
Diesel index number, min.	45
Viscosity-gravity number, max.	0.86
Boiling point—gravity number, max.	188

The "gum" content in the fuel oil is not to exceed 75 milligrams per 1,000 cc. of fuel as determined by the "burn-out" test as follows:

Note: Recracked or recycled fuel oils are usually not satisfactory.

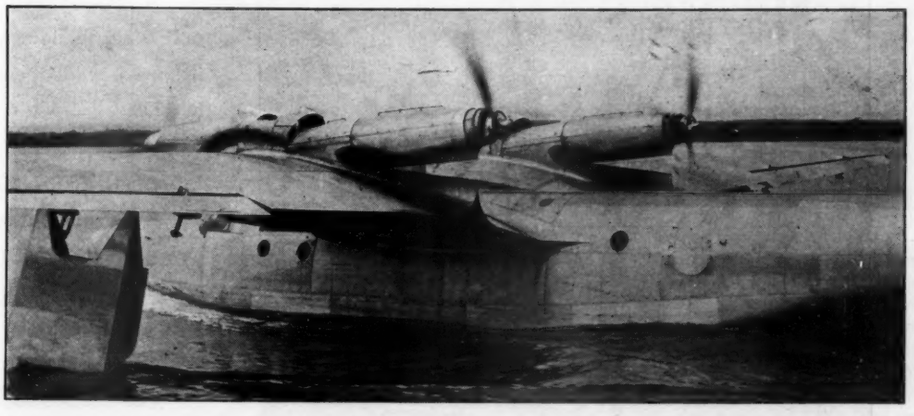
Gravity is no measure of a satisfactory fuel oil and should not be used as a guide.

Aviation Uses

Although strong efforts have been made to adopt the Diesel engine to aircraft use, the gasoline motor appears to go without challenge in all countries except in Germany. In America the objection to the Diesel has been primarily one of excessive weight and lack of flexibility. In Germany the economy of the operation of the Diesel is stressed. Which of the two view points will eventually be adopted as final remains a question which time alone may answer but it can no longer be stated that application of the Diesel engine to air craft is impracticable. It may be of interest to review that in September of this year the LZ130 made a successful test flight from its hangar in Friedrichshafen, Germany, utilizing four Diesel engines as power and as a result of tests the zepplin is said to be capable of cruising a distance of 8,700 miles at 78 miles per hour carrying a load of 30,000 pounds. The Diesels combine to develop 5,280 horsepower. As further proof of the practicability of Diesel engines for aviation use German transatlantic planes utilize this type of power. A picture of one of these planes appears here with brief data regarding its characteristics.

Railroad Use

Everyone in the United States who follows closely the changes which are coming about in railroad engineering cannot help but be favorably impressed with the work Diesel-electric units are accomplishing daily. The Burlington Zephyr served as the pioneer of Diesel-powered trains and its success soon led to the building of similar units. The largest unit to be built of this type was placed in service on December 15 by the Seaboard Railway. This train is powered by three 2,000 horsepower units each, the locomotive is 210 feet long and weighs 900,000 pounds. The electric generating capacity of the three units making up the locomotive could supply the electric requirements of a city of 10,000 population.



Junkers flying boat equipped with four Diesel engines each of which weighs 1,140 pounds and develops 510 hp. In flight the plane consumes about one-third pound of fuel per horsepower-hour. Note the two propellers fore—and two aft. The engine and propeller assembly may be tilted. Photo courtesy of Paul H. Wilkinson, aeronautical engineer

SPARKS FROM THE NEWS

ILLINOIS PLEASE NOTE

Michigan's substantial reduction in crude prices on Monday is an object lesson on what happens when producers deal with price-cutters in the sale of part of their output.

CALIFORNIA STOPS

It appears that California again will come to a quick stop on the edge of the cliff and bring its production in line with demand.

WINTER AIDS

Reports show improved business conditions are aiding the winter tourist centers, including the filling stations.

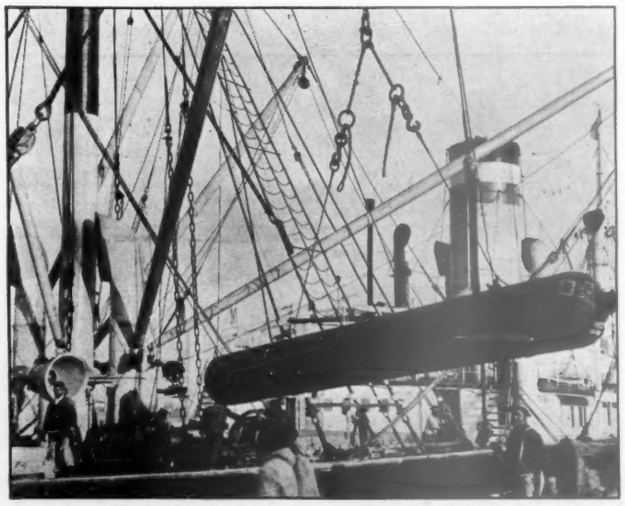
REMINISCENT

A high board fence around a wildcat in North Texas, with scouts resorting to field glasses, is causing veterans to reminisce about the good old days when—

NEXT APRIL

One of the industry's best known economists says refiners are headed for 92,000,000 barrels of gasoline storage by April 1—10,000,000 barrels more than needed—if they continue present operations.

NO SALE



Loading containers for helium gas aboard the freighter Idarwald at Houston, Tex., for return to Germany—empty

QUALIFICATIONS

"I qualify as an oil man as well as many of you, for I am a stockholder in a company that has one well, not yet paid for," Eldorado editor told members of the Kansas association at their convention in Wichita.

THE REASON

Oil-consuming Diesel engines are expanding rapidly because they are doing things that observers a few years ago said they never could do.

MORE CHEEK

Cheek pool in Jefferson County, Texas, assumes major importance with a 1½-mile extension.

NO CHANGE

Those who wanted changes in the Interstate Oil Compact Commission finally came to the conclusion they'd better perfect what they already had, and the compact is to be presented for renewal as is.

NEXT

Developments in Colombia have reached the point where the driller will succeed the geologist on several large concessions.

FORERUNNERS

A drilling well in Worth County, northwestern Missouri, and a rig in nearby Sullivan County are forerunners of the extensive wildcat campaign predicted for the Forest City basin in 1939.

HOLDING THE LIMELIGHT

A Devonian-lime well in Marion County, Illinois, and a new pool in Gibson County, Indiana, kept the Illinois basin area in the limelight over the past week.

ENCOURAGEMENT

The 118,000,000-barrel accumulation of residual fuel oils is falling fast, prompting forecasts that, barring a slump in manufacturing activity, the country's burdensome inventories will be at an economic level early next year.

LEON C. PHILLIPS
governor-elect
Oklahoma

JOHN E. MILES
governor-elect
New Mexico

HIRAM M. DOW
lieutenant governor
New Mexico

JAMES M. MURRAY, Sr.
lieutenant governor-elect
New Mexico

Interstate Compact Is Supported By Incoming Governors

By D. H. STORMONT

FORT WORTH, Texas, Dec. 17. —Governors-elect of three important oil-producing states, or their official representatives, assured members of the Interstate Oil Compact Commission at its quarterly meeting here last Thursday they were sympathetic with the aims of the compact and would do nothing to interfere with the work that had been accomplished. Oklahoma, Kansas and New Mexico all have incoming governors and the announcements in favor of the compact served to remove any doubt as to whether the compact would continue with full effectiveness. Representatives of California and Michigan expressed their approval of the compact and predicted their states may join it.

A unanimous vote was registered in favor of seeking congressional approval for a two-year extension of the compact in its present form. This will require the passage of a resolution by the legislature of each member state in their next sessions as congressional approval of the compact expires in September of next year. Judge E. R. Sloan, chairman of the Kansas Corporation Commission, read the report recommending the extension of the compact's life.

Governor-elect Leon C. Phillips, of Oklahoma, who will take office the first of the year, told the commission he was sympathetic with the aims of the compact and promised he would reappoint wherever possible the men now serving on the commission. He assured Oklahoma oil men present he would recommend that no new oil taxes be levied during his term of office.

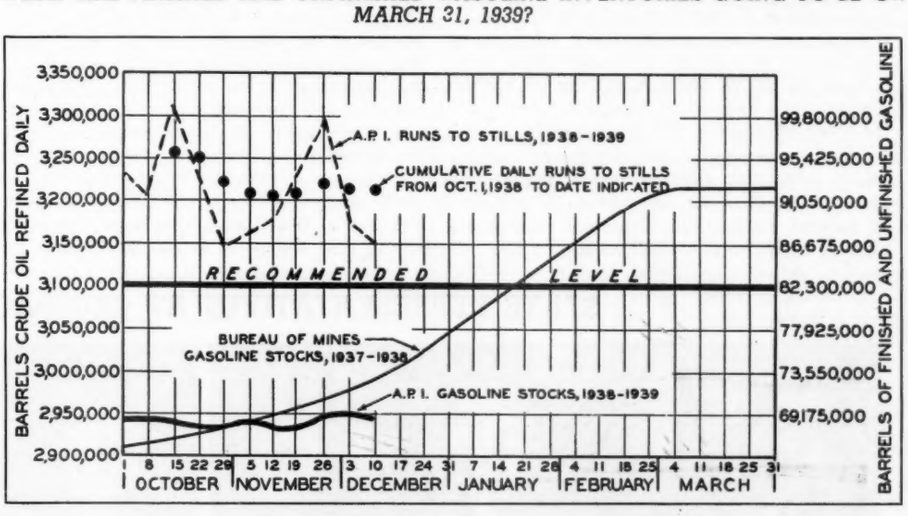
Governor-elect John E. Miles of New Mexico also pledged his support to the compact and stated he would do nothing to interfere with his state's conservation work and part in the pact.

Neal Anderson, Torrance Calif., personal representative of California's governor, discussed his state's problem of keeping production near market demand estimates. Opening of several fields this year brought California's daily potential to near 2,000,000 bbls., he said, making proration and conservation very difficult, especially so, since fields opened in townlot or harbor sections presented a drainage problem. The governor-elect, he said, was in favor of conservation and hoped his state might become a member of the compact next year but this is quite doubtful.

James C. Graves of Saginaw, Mich, and representative of that state, predicted Michigan would join the compact next year, and in addition would probably set up conservation laws.

E. B. Shawver, representing the governor of Kansas, pointed out the need for the other oil

WHAT ARE FINISHED AND UNFINISHED GASOLINE INVENTORIES GOING TO BE ON MARCH 31, 1939?



The American Petroleum Institute chart prepared by Fred van Covern and reproduced here in simplified form was designed primarily for the purpose of translating daily average crude runs into gasoline inventories as of March 31, 1939. These two factors, indicated by the vertical scale lines on each side, are in mathematical relationship to each other and have proven accurate in the light of past experience. The unique feature of the chart is reflected by the dots which appear on each weekly vertical line. The dot of the latest week should be projected horizontally to the right hand scale. This shows for the December 10 dot an estimated gasoline inventory position of approximately 91,125,000 bbls. for March 31, 1939. Each weekly dot takes into account the accumulated results of refinery operations from October 1, 1938, to date. If, therefore, the daily runs to stills exceed the recommended level of 3,100,000 bbls. for the balance of the period in the same proportion as they have exceeded it since October 1, 1938, to date, we will come to March 31, 1939, with over 91,000,000 bbls. of gasoline on hand. The recommended level of refinery operations, 3,100,000 bbls. per day, would bring us to March 31, 1939, with 82,300,000 bbls. of gasoline, a figure considered sound by economists

states to join the compact and pass conservation laws. "If not," he said, "the whole compact may break down."

Discussions on current market trends and the present statistical position of the industry were offered by Dr. A. G. White of the Bureau of Mines, and Fred Van Covern of the American Petroleum Institute.

Doctor White reviewed the crude and gasoline stock situation over the past two years and their effect on the industry's activity in 1939. He pointed out that in 1937 a total of 46,000,000 bbls. was added to stocks of all oils, whereas only 5,000,000 bbls. was added in 1938. Since the larger part of the drop in inventories east of California was in crude stocks he felt there was no further reduction in crude stocks necessary. Gasoline stocks, however, he estimated were about 10,000,000 bbls. too high.

He believed the industry ran 4,500,000 to 5,000,000 bbls. too much crude to stills during the last quarter of this year. Thus, whereas he had earlier forecast crude runs should average about 3,100,000 bbls. daily during the first quarter of 1939, in order to have gasoline stocks at an economic level on March 31 it would be necessary to hold them at about 3,050,000 bbls. daily. In addition to holding crude runs at low levels he felt refiners should operate to receive a maximum distillate yield, lowered residual cut and an average gasoline yield. In this way the demand for light fuels could be cared for without piling up too much gasoline. In summary, he forecast a 2.5 per cent increase in gasoline demand during the first quarter of 1939; exports to be no higher but possibly lower; and a daily demand for some 3,300,000 bbls. of crude.

Mr. Van Covern stated his studies bore out the same conclusions as those of Dr. White regarding the need for low crude runs during the first quarter of next year. He estimated gasoline stocks should have been at a minimum of 60,000,000 bbls. (of which 43,000,000 bbls. were fixed unavailable stocks) on October 31 of this year and on November 30 were about 10,000,000 bbls. too high. To have only 80,000,000 bbls. of gasoline in storage on March 31, which he felt was an economic level for inventories, he felt runs to stills should be kept below 3,100,000 bbls. daily.

Governor E. W. Marland, making his last appearance as a member of the commission, urged the other oil states to join the compact.

Date of the next compact meeting was set for March 14-15, 1939, with selection of the meeting place left to Chairman Thompson. He indicated he favored holding it in California in hope the meeting might influence California.

I.P.A.A. Committee Will Continue Its Studies

FORT WORTH, Tex., Dec. 19.—The special study committee of 36 of the Independent Petroleum Association of America at its meeting here last week adopted a resolution authorizing President Charles F. Roeser to appoint a committee to make a broad study of the entire field of transportation of crude oil and its products by pipe line, rail, water, truck or otherwise. It will also study the rates and tariffs governing such transportation "to the end that excessive transportation costs, if any, now prevailing be eliminated and only reasonable and fair rates and tariffs be hereafter approved by the regulatory bodies authorized by law to fix the same."

The committee, to consist of five members, will be permanent and will function in cooperation with executive officers of the association under direction and supervision of the executive committee. With approval of the executive committee it will intervene in behalf of the association in rate hearings, federal and state, when deemed advisable. It will also, subject to the same approval, appear before congressional and legislative committees to obtain passage of any legislation deemed necessary to require owners of pipe lines now in existence or hereafter laid to report to the proper legal bodies the cost of such lines, maintenance and operating costs, determination of profits, and passage of legislation looking to limitation of profits within reasonable limits.

After a two-day discussion of six questions submitted to it at the association's annual meeting in Tulsa, the committee took no direct action. Of the original questions submitted, the first two were divorcement of pipe lines, and disintegration of integral companies. The committee approved the reports of the subcommittees and recommended that no affirmative action be taken on either. On the suggestions made for a study of marketing practices and their relations to crude oil production, a resolution was adopted recommending that the executive committee authorize President Roeser to appoint a committee to determine the status of the marketing code now on file with the Federal Trade Commission. This code was drafted shortly after the expiration of the N.R.A. Code in 1935. The same committee is to determine the feasibilty of having a survey made of the various operations from the refiner to the consumer, to determine the effect of such operations on the producer of crude oil. This survey would be made by some nationally known, disinterested agency.

The committee to be appointed will also ascertain whether the S.E.C. has the authority to require, under the present law, a profit and loss statement on each separate branch (producing, transportation, refining, and marketing) from companies now required to report to the Securities and Exchange Commission.

The question of recommending that an umpire or agency be established to make allocation of crude oil between oil producing states, to consider allocations to refiners, and to amend the Connally hot oil law to provide allocations to states, was considered by the whole committee and it was decided to continue the study in the light of efforts being made by the Interstate Oil Compact Commission, state regulatory bodies, and the industry to correct existing inequities.

The subcommittee which considered the question of refinery regulation through the compact, met on several occasions with a committee of the Western Petroleum Refiners Association. The subcommittee's final report, approved by the whole committee, recommended enactment of federal legislation to provide for voluntary agreements within all basic industries affecting industrial operations. The voluntary agreements should, they felt, be subject to the approval of a proper governmental agency, and when approved, they should exempt those operating under such agreements from prosecution under the antitrust laws. Such a congressional act, it was recommended, should provide that the federal agency might withdraw the immunity granted under such agreements upon proof of the violation of any provisions of such agreements.

The standing committee on balance of supply with demand in its report to the executive committee stated it had found the following unfair and unsound conditions existed in the industry:

(Continued on Page 111)

STATE REPRESENTATIVES AT COMPACT MEETING

JAMES C. GRAVES **Michigan** | *NEAL ANDERSON* **California** | *E. B. SHAWVER* **Kansas** | *JAMES DUCE* **Colorado** | *C. M. KNEIER* **Illinois** | *W. H. McFADDEN* **Louisiana**

Californian Plan to Cut Production to 600,000 Bbls.

By L. P. STOCKMAN

LOS ANGELES, Calif., Dec. 19. —California crude oil producers, recognizing the existence of a serious over-production situation and inability of marketers to continue storing excess production, have approved a program that has as its objective a reduction of crude oil production to a maximum of 600,000 bbls. per day. The proposal, unfortunately, has not met with unanimous approval and it remains to be seen how effective it becomes. The program represents a projected reduction of about 60,000 bbls. per day and calls for compliance before the close of December. Developments during next week should determine the status of the existing price structure as the available storage is rapidly filling.

The present crisis has not arisen over night. Marketers and refiners warned producers several months ago constructive action was necessary to prevent a general collapse. A subsequent meeting of operators in Los Angeles, presided over by Bert Mattei, president, Honolulu Oil Corp., practically broke up without accomplishing the desired results. Some additional curtailment was made but not sufficient. The Central Committee of California Oil Producers, instead of reducing the monthly allotment in conformity with declining consumption during the past few months has disregarded the demand by allowing the allotment to remain at 615,000 bbls. per day.

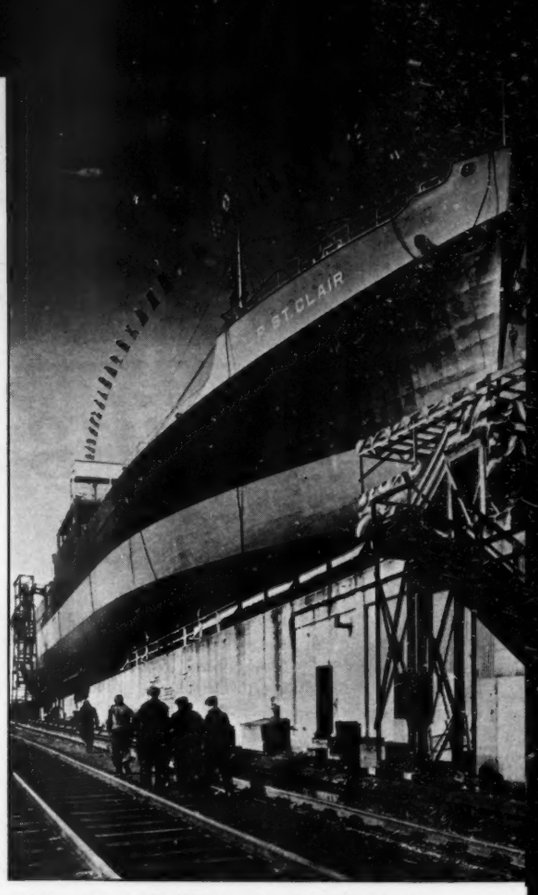
A few weeks ago the situation appeared almost hopeless with production hovering around 660,000 bbls. per day in the face of an estimated demand of about 590,000 bbls. indicated by the Bureau of Mines. The projected maximum allowable of 660,000 bbls. per day will not bring production and demand into equilibrium but should alleviate conditions so anticipated additions to storage during the next few months will be reduced.

Difficulty Expected

The oil industry on the Pacific Coast has entered the period of lowest consumption and while general business conditions have not improved to the extent expected it is believed opening of the Golden Gate International Exposition at San Francisco early in 1939 will stimulate the demand for petroleum products and thus take care of part of the oil expected to be added to stocks. A general survey reveals the probability that production will not be reduced to 600,000 bbls. per day but a substantial reduction will be made by more stringent curtailment in several fields that have been overproducing for months. If the curtailment is sufficiently large to diminish expected accumulation of stocks the price structure will be maintained but if operators fail to conform it is a physical impossibility to keep on storing crude and refined oil indefinitely.

Standard Oil Co. in an official statement having called attention to the necessity of immediate additional curtailment, the Oil Producers Agency of California, San Joaquin Valley Producers Association and Independent Oil Producers Agency stepped into the breach to avert the crisis that would have resulted in price recessions and compulsory regulation of production as soon as available storage had become filled. The first meeting of this group was held in Bakersfield on December 13 and the second meeting in Los Angeles December 20.

At the initial meeting of San Joaquin Valley operators a resolution was passed to the effect that, "Whereas, the oil fields of California for more than a year last passed have produced an amount of oil far in excess of demand, causing storage to increase since January 1, 1938, in excess of 30,000,000 bbls.; and, whereas, production in excess of demand is wasteful and endangers the well-being and security of the oil industry and its employes, of other interdependent industries and their employes, and of the public in general; and, whereas, certain fields in the state are producing with moderation, not exceeding their fair share of the oil that can be marketed in and from the state, but other fields are producing wastefully and in excess of their fair share, tending to lose in ultimate total recoveries, and threatening the security of the industry, its employes and the public; and, whereas, it is evident, from facts and figures presented to this meeting, that the fields of this state should not at this time produce in the aggregate in excess of 600,000 bbls. daily; be it resolved, that the production of the respective wells and fields of the San Joaquin Valley immediately be curtailed to the allocations made by the state oil umpire on a state total of not exceeding 600,000 bbls. daily; and demand is hereby made on the Central Committee of California Oil Producers and the respective field committees that the methods of allocation and allotment be promptly revised where necessary to meet changed conditions as they now or may exist; and a request is hereby made to the three associations who have called this meeting, that they call a statewide meeting of operators to be held in Los Angeles, California not later than Tuesday, December 20; and that this resolution be read to the operators there assembled and that at such meeting a determinaiton be reached in good faith to reduce production of oil of the State of California to 600,000 bbls. daily before Christmas; and be it further resolved that the allocations of the umpire be used under existing curtailment formulae until such time as such formulae can be adjusted after due consideration and hearing granted to operators desiring to be heard."



New Union Oil Co. tanker L. P. St. Clair

Most independent refiners and marketers are in favor of a reduction of production as they are desirous of reducing purchase commitments to prevent increasing stocks. Most of them have gone through two winters without price wars and have consequently prospered. Buyers are paying closer attention to the allowable of producers from whom they buy and are refusing to take oil produced in violation of curtailment. Some buyers have taken the precaution of demanding a signed statement that the oil has been produced in conformity with curtailment.

At the meeting of the Interstate Compact Commission at Fort Worth, Texas, the impression seems to have been entertained, that by holding the next meeting on the Pacific Coast it might be possible to bring California into the compact. There has been no change in the California picture to justify the expectation of California joining the compact. Previous suggestions have been turned down and there has been no change on the part of either California oil producers or the general public. None of the several attempts to secure passage of control bills and regulatory measures got far, one being voted down overwhelmingly by the electorate several years ago. The isolationist psychology is just as dominant today, if not more so. It is possible opinion might change, especially if present attempts to correct a serious situation are not productive of satisfactory results, but at the moment there appears very little likelihood that California producers would approve any attempt to pass necessary legislation permitting joining the compact.

The next action confronting the California oil industry, aside from the overproduction situation, will be the forming of a united front to resist a proposal of the incoming administration to put a production tax on each barrel of crude oil produced or its equivalent in natural gas which is usually 1,000 feet of gas. The California oil industry may also have something else to worry about because the present director of natural resources relinquishes his office January 3 and his successor will be appointed by the governor-elect, Culbert Olson.

Colombia to Witness Active Drilling Campaign in 1939

By C. O. WILLSON

BOGOTA, Colombia. — This republic over the next two years is to be the scene of exploratory development which should go a long way in determining the oil future of the northwest corner of South America.

Starting in 1936 there have been widespread leasing and applications for leasing of government and privately owned lands, accompanied by geological investigations covering the areas considered promising. There have been delays in granting some of the concessions for which applications have been made, due largely to disputes as to whether the lands belonged to the government or private citizens of the country.

Some of the concession companies which include several newcomers, have completed their geological investigations to the point where they are now ready to move in drilling rigs at selected wildcat locations. In addition to the concerns which have already started their exploratory drilling, at least three companies have wildcat drilling programs approved for 1939.

Conditions in Colombia

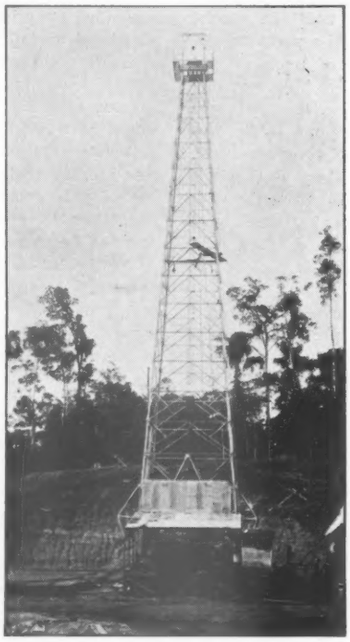
While conditions have materially improved over 25 years ago when this country first attracted the attention of oil explorers, there are still many natural difficulties to overcome in carrying on all phases of oil operations in Colombia. Its 460,000 square miles—approximately equal to the combined oil states of Texas, Louisiana, Oklahoma and Arkansas—cover an area which is 1,000 miles long, north and south, with the width ranging up to 700 miles. Half of the country is plains or llanos lands, with the remainder, where most of the 9,000,000 population live, consisting of mountainous regions broken by river valleys, of which the Magdalena is the largest. This stream, which is the most important transportation artery for oil as well as all inland commerce, extends 1,000 miles south from the mouth at Barranquilla and is navigable for a distance of 850 miles.

Rail facilities, consisting mostly of short lines, total less than 1,200 miles. The government is slowly extending its highway system, but road construction is costly, and only a few of the inland towns and cities are connected by improved roads.

Due to this situation, oil companies and all business have to rely heavily on airplane transportation for movement of personnel, mail, and express. This condition was stressed during the writer's visit to the capital of Colombia. The city was practically isolated so far as highway and rail traffic was concerned, due to heavy rains which had washed out the roadbeds at many points.

A commercial airline, however, was able to maintain its regular daily services out of here. In normal times it requires about two days by rail and highway to go from here to Buenaventura, on the west coast, a distance of 250 miles. To the north, five or more days are required via Magdalena River to Barranquilla, the northern entrance to the country on the Caribbean Sea. The airline maintains a daily service between Barranquilla and this capital, with two and one-half hours required for the nonstop trips. Three oil companies operate their own planes, and it is probable that as the operations of other companies expand, private planes will be placed in service as the practical solution of a transportation problem which is certain to become more acute should new fields be discovered.

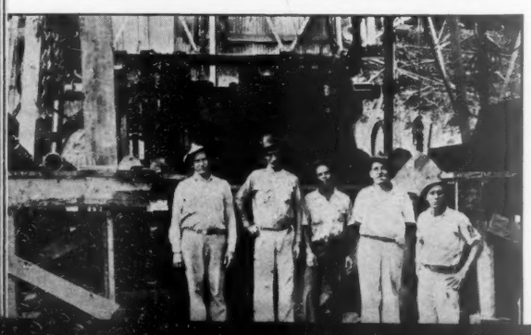
The climate varies from the hot tropical temperatures of the coast and river valleys to the below-freezing temperatures of the high mountain regions. The temperature of this capital city, where all the operating companies and most of those owning concessions maintain offices, averages 50° F., although only 4½ degrees north of the Equator. The altitude is 8,500 feet. Living conditions comparable to those in the United States are available here and in several other cities of Colombia.



Drilling rig in La Cira field of De Mares concession

An approximate division of the population is as follows: 20 per cent white, mostly pure Spanish; 10 per cent Indian, living principally in the eastern and southern sections; 10 per cent negro, and the remainder mixed races, principally Indian and Spanish. The pure-blood Spanish are the ruling class. The oil companies and the government are cooperating in a program of acquainting Colombians with all divisions of oil operations. Most of the oil-company personnel consists of Colombians, including many holding skilled and other responsible positions.

Colombian drilling crew of Tropical Oil Co.



Operations

There are only two companies whose operations have passed the exploratory stage. The Tropical Oil Co., a subsidiary of the International Petroleum Co., Ltd. (Standard of New Jersey) became interested in a property along the Magdalena River, in the Department of Santander, now known as the De Mares concession. The first marketed production from the Infantes and La Cira field was reported in 1921. Output increased rapidly in 1926 and 1927, when the Andian National Corp., Ltd., an affiliated company, completed a 335-mile pipe line connecting the field with Cartegena, a port on the Caribbean Sea. Present production is about 60,000 bbls. daily. The accumulative production from these two fields will total approximately 227,000,000 bbls. at the end of 1938. At Barranca Bermeja, on the Magdalena River, the company operates the only refinery in Colombia, which supplies practically all the refined products consumed in the country. The plant refines an average of 6,500 bbls. daily. Detailed information regarding the combined Tropical and Andian operations will be published in the December 29, 1938, issue of The Oil and Gas Journal.

The other producing company is the Colombian Petroleum Corp.* (Socony-Vacuum Oil Co., Inc., and the Texas Corp.) operating the Barco concession in eastern Colombia. This company's production will be marketed with the completion of a 12-inch pipe line now under construction by the South American Gulf Oil Co.* connecting the concession with Convenas, a port on the Caribbean Sea.

Exploratory Work

The accompanying maps show the location of the principal concessions in Colombia and the possible oil areas in the country as outlined by government geologists. Most of the concessions so far granted to oil companies are located in the Magdalena Valley, mostly east of the river. The area extends along the river about 200 miles from Bodega Central on the north to Laclorada on the south. Most of these properties were obtained as concessions from the government. South of this area for a distance of 60 miles, a number of smaller tracts have been leased from private owners. Colombian laws provide that mineral rights are reserved to the nation on all lands passed from government ownership after October 28, 1873. Private ownership of mineral rights is recognized in all titles antedating that date. The possibility of oil in this general area has brought legal disputes between the government and its citizens regarding the ownership of the mineral rights, and this accounts for some of the delays that have developed in the granting of concessions or leases.

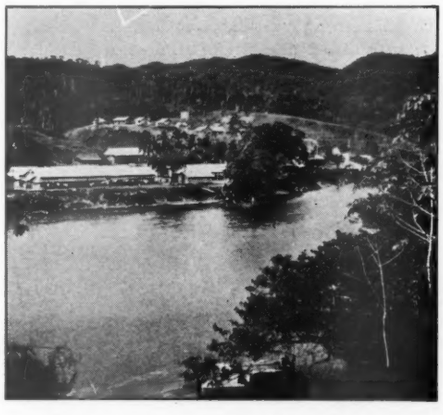
Dr. Alfonso Lopez, whose term as president recently expired, signed in November, 1936, Law

*Operations of these two companies were described in an article appearing in the December 15, 1938, issue of The Oil and Gas Journal, p. 18.

Aguas Claras camp of the Socony-Vacuum Oil Co. de Colombia located in Restrepo concession

160, which incorporated important modifications of the Colombian oil code, Law 37 of 1931. The modifications included many provisions requested by oil companies and are partly responsible for the active interest that has been displayed by major oil companies over the past two years.

One of the amendments made effective in 1936



Camp of Colombian Petroleum Co. on Rio de Oro, Barco concession. Right side of river is in Venezuela

relates to the furnishing of technical data by companies that undertake exploration. According to Article 5 of Law 37 of 1931, all parties engaged in the petroleum industry in the branches of prospecting, exploitation, transportation, and distribution are required to furnish all scientific, technical, economic, and statistical data in their possession that, in the opinion of the government, may be essential for making a geological and geophysical survey of the country. The objection to the above requirement has been that information of exploratory nature, gained at great expense, would become available to the government and possibly to rivals. The new law requires that, except for the final provision in Article 5, the government shall require only geological and geophysical data relative to a field from the time the interested party has actually started drilling on the property.

The second amendment extends the period during which explorations for oil are allowed. According to Article 18 of Law 37, the period of exploration allowed shall be three years from the date of the execution of the concession contract, renewable from year to year up to three additional years, provided proof is furnished that the period thus allowed has been insufficient to achieve the purposes of the exploration.

While Law 37 of 1931 was in force, various concession contracts were signed, and some of them were unconditionally surrendered by the interested parties with the complaint that insufficient time was allowed to permit them faithfully to fulfill their obligation.

Article 18 of 1931 is modified so that the exploratory period is divided into the initial period of three years from date of signing the concession contract, an ordinary renewal period of three years, and an extraordinary renewal period of an additional three years.

The government requires that six months previous to the initial exploratory period of three years, the concessionaire shall install within the concession a complete drilling outfit which will be maintained in operation. If at the end of the sixth year the concessionaire has not found oil in commercial quantities, the government will grant an extraordinary renewal period from year to year up to three years.

The third and fourth amendments to Law 37 of 1931 cover the question relating to private property on petroleum and the definition of such rights arising therefrom.

The principal changes which are incorporated in the present amendments may be summarized as follows:

1. Definition of the rights of private property on petroleum.
2. Process which the ministry must follow in reviewing acceptable proofs, relative to private property on petroleum.
3. Proofs which accredit such private property.
4. Period within which proceedings may be instituted as provided by general law.
5. Registration of the instruments duly accepted.

In order to foster the exploitation of oil on private property, the fifth important amendment scales down the royalty payments, provided exploitation measures are started within a certain period after the law becomes in force.

The former schedule, as provided in Article 35, started at 8 per cent of the gross product exploited for oil produced at 100 kilometers (62 miles) from the port of shipment and ended at 1 per cent of the gross product exploited for oil produced at 900 or more kilometers (600 miles) from the port of shipment. The new royalties were stipulated as a result of complaints from private individuals that the above schedules were excessively high in view of the royalty payments required for nationally owned petroleum. The new royalties start at 7 per cent as maximum and end at one-half per cent, and represent a reduction of from 12½ to 50 per cent of the former tariffs.

The royalty on natural gasoline, which was formerly fixed at one-thirtieth of the gasoline obtained, is reduced to 40 per cent of this amount.

Refinery Construction

The sixth important change, aimed to promote the establishment of refineries within the country and obtain reduced prices of refined products, provides that crude oils obtained from exploitation of concessions obtained under the present law and Law 37 are exempt from royalty payments if refined within the country for domestic consumption. The law also provides for a reduction of one-fifth on royalty payments for crude oil refined in Colombia and the products exported. Refinery equipment is exempt from import duties.

The work of the Department of Petroleum of the "Ministerio de la Economia Nacional" under Dr. Cesar A. Pedraza, general director, has also been widened and is commended by oil operators. Dr. Silvano E. Uribe is chief of the technical sec-

Pipe line station of Andian National Corp., Ltd., located in field at El Centro

tion and Dr. Eduardo Garmba is chief of the fiscalization section. Dr. Felix Mendoza, a Colombian who graduated from the University of Oklahoma, is chief petroleum engineer. Dr. Benjamin Alvarado, a graduate of the University of Minnesota, is chief geologist of the department. Dr. Sady Gonzales Bernal is national interventor of petroleum, and Mr. Manuel Torres is secretary of the department.

The Socony-Vacuum Oil Co., Inc., through its affiliated Socony-Vacuum Oil Co. of Colombia and the Compania de Petroleos del Carare, is further advanced in its exploitation and exploratory work than any of the other new companies holding concessions. The concessions of the two companies, as shown on the map, are located in the Magdalena Valley just north of the De Mares concession of the Tropical Oil Co. The Socony-Vacuum of Colombia Restrepo concession consists of 49,232 hectares (approximately 128,000 acres), and it is located between the Paturia and Sogamoso rivers in the Department of Santander. The Compania de Petroleos del Carare concession is located in the municipalities of Lebrija and Puerto Wilches, Department of Santander.

The company is fortunate in that a railroad runs from Puerto Wilches on the Magdalena River to Las Bocas, near Bucaramanga, the capital of the Department of Santander, and crosses part of the Restrepo concession. Despite this fact, the company has made large expenditures in building roads and establishing camps to carry on operations.

Complete Camp

The company has a complete camp at Aguas Claras, which is connected to Sabaneta, on the railway, by a road which is 10 miles in length. The company has 50 engineers, geologists, and other employes at Aguas Claras, with 500 Colombian workmen. Half way along this road from a place called Horizonte, a branch road has been built to the site of the Socony-Narino No. 1 well, which is now drilling below 5,000 feet. The well is being drilled on the Narino uplift. A second location is being prepared. Three wells have been drilled by the company on the Las Monas anticline, one of them being a small producer. A landing place for airplanes has been built near the Aguas Claras camp, and the Scadta airline company maintains regular passenger service to this point. Geological work is under way on the concession of Compania de Petroleos del Carare, but actual drilling has not started.

The Compania de Petroleo Shell de Colombia is the Shell representative in Colombia. The company has completed practically all the preliminary work necessary for an active drilling program in 1939. The company has two concessions of 50,000 hectares each, located in the Carare region. In connection with its geological work on the concession, the company maintains a camp at Callejas upstream from Puerto Berrio. Above Callejas, at Zambito, a highway is being built connecting to the site of the first well in Monteoscuro. This location is about 22 miles from the Magdalena River. A company camp is maintained at Zambito.

On the second concession downstream from Puerto Berrio, at Cantimplora, the company is building a camp. It is anticipated that test drilling will take place on both concessions during 1939.

While applications for large concessions are pending, the government records show only a few companies, in addition to those whose operations have been described, actually having closed agreements with the government. The government reports show the following additional companies have contracts now in the exploratory period:

The Sociedad Nacional del Carare, which is partially owned by the Tropical Oil Co., has a 33,425-hectare concession located in the Magdalena Valley, municipality of Bolivar, in the Carare region. The Tropical company is now drilling the first well at San Fernando, which is connected by a 25-mile roadway to the Magdalena River.

The Consorcio Minero Nacional, which has been transferred to Compania de Petroleo "El Condor," has a 44,258-hectare concession located in the municipality of Bolivar, Department of Santander. Geological exploration is under way.

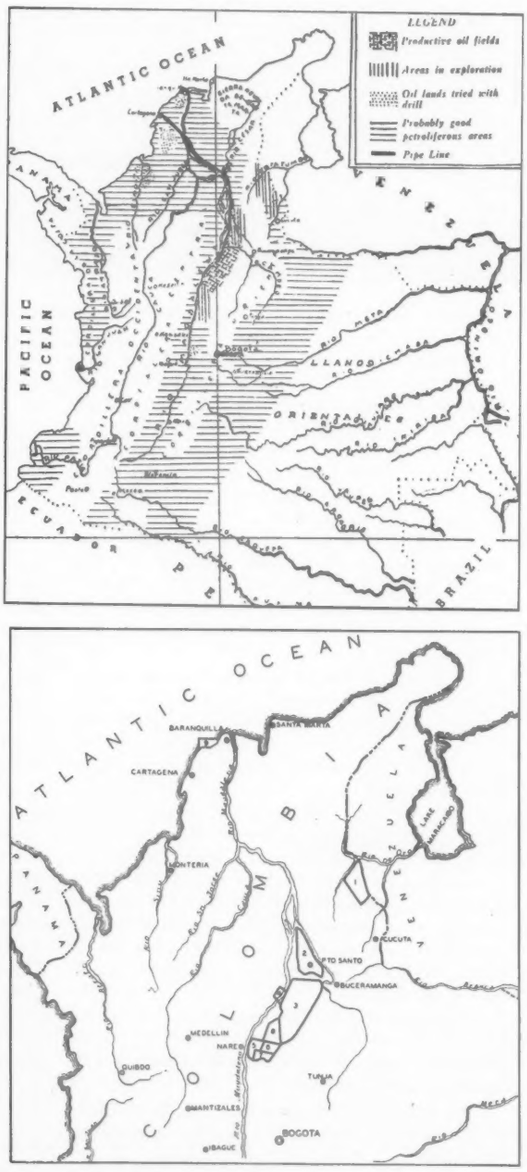
Compania de Petroleo El Condor has a 47,810-hectare concession in the municipality of Remedios, Department of Antioquia. Geological surveys are under way.

Daniel A. del Rio has a 20,141-hectare concession in the Galerazamba region on the Atlantic Coast, Department of Atlantico. Surface exploration is under way.

The following companies and individuals have applied for concessions: Sociedad Colombiana de Petroleos, Richmond Petroleum Co., Lobitos Oilfields, Ltd., Leonard Oil Development Co., Frederick R. Ryan, Francisco Andrade and Jose H. Andrade, Juan de Dios Gutierrez, Compania del Valle del Magdalena, Jaime Gutierrez, Texas Petroleum Co., Compania de Petroleo Shell de Colombia, Compania de Petroleo La Perla de Colombia, S.A., William Neilson, South American Gulf Oil Co., Manuel Toro, Roberto Pena, Socony-Vacuum Oil Co. de Colombia, Hernando Franco, Evaristo Obregon Arjona, Sindicato de Inversiones, S.A., Compania de Petroleo "El Condor."

Latin American Petroleum Corp., Transcontinental Petroleum Co., Mid Colombia Oil & Development Co., Compagnie Francaise des Petroles, Richmond Petroleum Co. of Colombia, Colombia Syndicate, Leonard Exploration Co., Magdalena Syndicate, Nato Petroleum Co., Colombian Oilfields, Ltd., Coastal Oilfields of Colombia, South American Gulf Oil Co., Caribbean Petroleum Co., Compania Colombiana de Petroleos, Sociedad Interdepartamental de Petroleos, Socieded Colombiana de Fomento, Compania Explotadora del Sinu, Union Colombiana de Petroleos, Societe Europpenne des Petroles, Texas Petroleum Co., Granada Oil Co.

The Richmond Petroleum Co. (Standard of California), and the Texas Petroleum Co. (Texas Corp.), have been particularly active in carrying on geological investigations in the upper Magdalena River and have applications filed for important concession rights.



Maps of Department of Mines and Petroleum, Department of National Economy, showing oil fields, areas in exploration and possible oil areas and location of concession in Colombia. Lower map shows location of concession as follows: (1) Colombian Petroleum Co.; (2) Compania de Petroleos del Carare, Socony-Vacuum Co.; (3) Tropical Oil Co.; (4) Compania de Petroleo "El Condor"; (5) Consorcio Minero Nacional; (6) Sociedad Nacional del Carare; (7) Compania de Petroleo Shell of Colombia; (8) Compania de Petroleo Shell de Colombia; (9) Daniel A. del Rio

I.P.A.A. Committee Reports

Encouraging Signs

Encouraging signs pointing to increase in demand for petroleum products in the first quarter of 1939 are seen by the I.P.A.A. committee on balance of supply with demand in its quarterly survey which says the demand outlook is encouraging, but there is danger that refined inventories, by March 31, may be built up to wasteful levels and will contribute to continued demoralized markets. Gasoline stocks on March 31 should not exceed 83,000,000 bbls. Gas oil and heavy fuel stocks should be reduced materially. Production of crude during the first quarter of 1939 should be 3,250,000 bbls. daily, 2,540,000 bbls. daily east of California.

"The overall statistical position on November 30 was the most favorable of any time in the past 12 months. Due to continued low rate of production, crude oil stocks have been depleted by about 40,200,000 bbls. from November 30, 1937, and are at the lowest point in more than 17 years. Gasoline stocks were slightly lower on November 30 than on the same date of last year; however, they were excessive last year and were increasing. It is possible that a sound economical level for these stocks at the end of the year would be from 10,000,000 to 15,000,000 bbls. less than was on hand December 31, 1937."

Cooperation Is the Solution of Oil Problems, Kansans Told

By DAL DALRYMPLE

"Cooperate! Advertise! Woo the public!"

Thus may the petroleum industry solve its peculiar problems, put its own house into order and avoid the spectre of federal control, oil men of Kansas were told by speakers at the first annual convention of the Kansas Independent Oil and Gas Association in Wichita last Friday.

The independent operators, some 250 strong, heard Burdette Blue, president of Indian Territory Illuminating Oil Co. of Bartlesville, Okla., and Rolla A. Clymer, editor of The Times of Eldorado, Kans., stress the need for cooperation and the necessity of courting favorable public opinion.

"In seeking an immediate remedy for the ills that beset our business, we must cooperate to bring about economic self-government and control within the industry," Mr. Blue said, declaring that only by wholehearted cooperation and constructive effort can federal control be averted.

E. B. Shawver of Wichita, president of the association, reviewed the K.I.O.G.A. program of the past 12 months in his annual report.

"We did not start in to benefit at the expense of the industry, and we do not ask for a greater market for our crude oil at the expense of other states," he said. "This association was formed for the purpose of constructive work. We have accomplished a great deal since organizing a year ago. It is true we have been running less oil since we were organized, but look at Illinois. What would we be running if we had not been organized?"

Would Repeal Tax

One of the objectives of the association is to bring about repeal of the state tax on nonproducing royalties. Touching on this and other phases of the tax situation, Mr. Shawver said:

"We want to pay our way, but we want the governmental taxing agencies to be fair," and pointed out that a tax on nonproducing royalty was a levy on something that does not exist. In conclusion, he presented H. A. Meyer, managing director of the association, who presided during the remainder of the meeting. Mr. Meyer, summing up the work of K.I.O.G.A., said:

"The association came into being just a year ago, at a time when the industry over-all was askew with complexities and uncertainties which have continued through the year to hang as a pall upon our efforts to obtain for Kansas a fair part of the common oil market.

"During the year it developed that stocks of oil and finished products were at an almost all-time high as an aftermath of overproduction during the previous year. Again, Illinois with a daily production of about 25,000 bbls. at the beginning of the year was not in our picture at that time. During the year Illinois has loomed large, having today a production of 120,000 bbls.

"All these factors and others have stressed all the more the need for the association and had we not been organized to act in concert in these matters the outlet for Kansas oil today would be much closer to 100,000 bbls. than it is to 160,000 bbls. The association, too, has presented a medium which has helped to make articulate the viewpoint of the independent oil producer and the powers that be have had brought home to them for the first time that the Kansas oil situation is one which must receive fair consideration if the goal of stability and prosperity for all elements in the industry is to be attained."

Directors elected to a one-year term were: John Allison, McPherson; H. K. Beardmore, Wichita; John Braden, Hutchinson; Willis L. Hartman, T. C. Johnson, D. R. Lauck, E. H. Adair, E. C. Moriarty, Lee Scott and F. G. Stodder, all of Wichita.

The following directors were elected for two years: Guy Berry, Paul R. Johnson, of Independence; Arthur Brewer, Winfield; O. J. Connell, T. A. Helling, Eldorado; Walter Fees, Iola; H. B. Garden, Hutchinson; Homer Ira, Chase; Ward McGinnis, Eureka; Ralph Nicholson, Ellis; G. H. Plank, Burrton; L. A. Babb, George Bruce, Courtney Davis, James Davis, Jr., J. B. Foster, Theodore Gore, John Harwood, John O'Shaughnessy, Robert F. Pielsticker, W. E. Reeves and Earl F. Wakefield, all of Wichita.

Holdover directors are: John Denman, Jr., Independence; Carl Weiner, Chanute; G. L. Ramsey, Eldorado; R. E. Youker, Hutchinson; A. H. Witt, Russell; E. B. Shawver, J. A. Aylward, George W. Hinkle, Ralph J. Pryor, S. A. Yarnell, A. S. Ritchie and J. A. Vickers, all of Wichita.

Officers for 1939, chosen at a meeting of directors Saturday are: E. B. Shawver, president, reelected; D. R. Lauck, first vice president, reelected; John Denman, Jr., second vice president, reelected; Ralph Nicholson, third vice president; James Davis, Jr., secretary; J. A. Aylward, treasurer, reelected; H. A. Meyer, managing director, reelected; John P. Roberts, assistant managing director, reelected; executive committee, J. A. Vickers, George W. Hinkle, A. S. Ritchie, Willis Hartman, John Denman, Jr., H. B. Garden and J. A. Aylward.

BURDETTE BLUE

Chairman E. R. Sloan of the Kansas Corporation Commission commended the association for its cooperation with the commission. He said that a regulatory body, such as the commission, must receive proper information and that information must come from the industry. "Moreover," he said, "it can go no further than absolutely necessary in its regulation of an industry. It should refuse to do the thing the law does not specify as readily as it does that which the law directs."

The principal speakers, Mr. Clymer and Mr. Blue, agreed that only by wholehearted cooperation and constructive effort can the petroleum industry solve its problems and avoid governmental control.

"We cannot take the state compact route with a guarantee of safe arrival at our destination," Mr. Blue said, qualifying his statement with the remark that the compact has been of great practical value. He expressed the opinion consistent with that of the industry generally that if the oil men cannot solve their own problems, only federal control is left.

Raps Unnecessary Drilling

"So, in looking for an immediate remedy, we have one solution—economic self-government and control within the industry," he continued. "We must prove we are capable of governing ourselves, and we are doing a good job. Basically and permanently, our objective should be fewer wells with consequent higher allowables per well. Present low allowables per well present an immediate, pressing problem almost serious enough to require and justify an emergency solution. Excessive drilling is economic hari-kari. Those who follow wider spacing and retard development of their own properties should be rewarded with larger allowables per well. We must seek proper, efficient and economic operation in all pools. The impracticable operator is in the minority, but the tail wags the dog."

Urging cooperation among oil men, he said, "we are nothing less than partners—partners whether we will it so or not, yet we stay fairly well aloof."

He termed proration true conservation, "in the consumers' interest as well as in our own. If our allowables are further reduced, we will think it is entirely in the consumers' interest." In concluding, Mr. Blue pointed out that producers are concerned principally with two things, their fair and equitable share of the day's market and a compensatory, uniform, posted price for their product.

The OIL AND GAS JOURNAL

PRODUCING REFINING NATURAL GASOLINE PIPE LINE

Published weekly by The Petroleum Publishing Company at Tulsa, Oklahoma

Forum Found

The Texas Railroad Commission's extension of the two-day shutdowns until March 31, the support of new state executives for continuance of the interstate compact, and the constructive course of the I.P.A.A. Committee of 36, all favorable developments, successively held attention during the week.

But there was another development, more remarkable, and probably more far-reaching.

The industry is just awakening to the full significance of the new technique employed by the Texas commission at its hearing on nominations for January.

Upon invitation of the commission executive heads of many important refining units were present. The hearing developed into an open forum for discussion of refinery operations.

The testimony made public for the first time certain manufacturing programs and objectives. By their frank and candid testimony the company executives revealed confidence in the purposes of the commission and an unmistakable spirit of subordinating selfish ends for the good of all.

There was a notable absence of merely disputatious questions. In fact there was a seriousness of purpose that gave hope for beneficial results.

The commission also had the advantage of reports from economists of the industry, indicating estimated demand and economic stocks.

Men in the industry, great and small, have freely admitted that refining excesses have been a major deterrent for the past 18 months. Refiners themselves recognize this but have been unable to cope with it, due primarily to inability to determine each individual relationship to a sound national inventory.

The famous Hyde Park suggestion of two months ago disclosed an understanding of this weakness by the administration.

During the latter half of 1937 crude runs to stills got out of hand and inventories skyrocketed. Warnings were sounded to no avail.

The industry has been struggling to its feet ever since. But the avalanche had started and there was no simple way to stop it.

The application of sound economics was still stymied by literal interpretation and prosecution of outmoded laws.

Although crude oil operations had been placed upon a conservation basis, the discordant note in the refining division was frustrating the harmonious efforts of the producers.

Yet it was not lack of desire to cooperate that was the cause of the refiners' plight. A misunderstanding of the spirit of cooperation and the dire result of that misunderstanding were painfully fresh in the memory.

A legal backdrop was the first requirement for any scene that would bring the refining situation into focus.

Existing machinery appeared inadequate. The interstate compact was carefully considered by some of the best minds in the industry following President Roosevelt's suggestion to Colonel Thompson. Nearly all agreed that this plan had impractical aspects that were unsurmountable.

It was pointed out that 28 states harbor operating refineries, while, after four years, the interstate compact includes only six of the oil-producing states.

Other agencies were considered and found wanting. The industry agreed with the president that "a treaty

is needed," but the treaty that would accomplish the desired results was a treaty between the Department of Justice and the industry.

Conservation through self-regulation was acknowledged to be practical and preferable, but laws of nearly 50 years vintage still being aggressively enforced prevented it.

The hope of permissive regulation in time to save the situation seemed remote. The impasse remained unbroken.

Then came the Austin hearing. The oil companies, in response to special invitation, sent their directing heads to testify. The day had come for getting down to brass tacks, and the men in attendance were qualified to do that.

The roll-call registered the determination of the companies to cooperate to the limit. Frank answers to all questions confirmed that fact. Their testimony was illuminating and helpful.

The Railroad Commission was setting up in the public records vital facts regarding manufacturing programs and inventory objectives. It was impressing upon all the necessity for crude purchasing companies to hew religiously to the line of ratable takings.

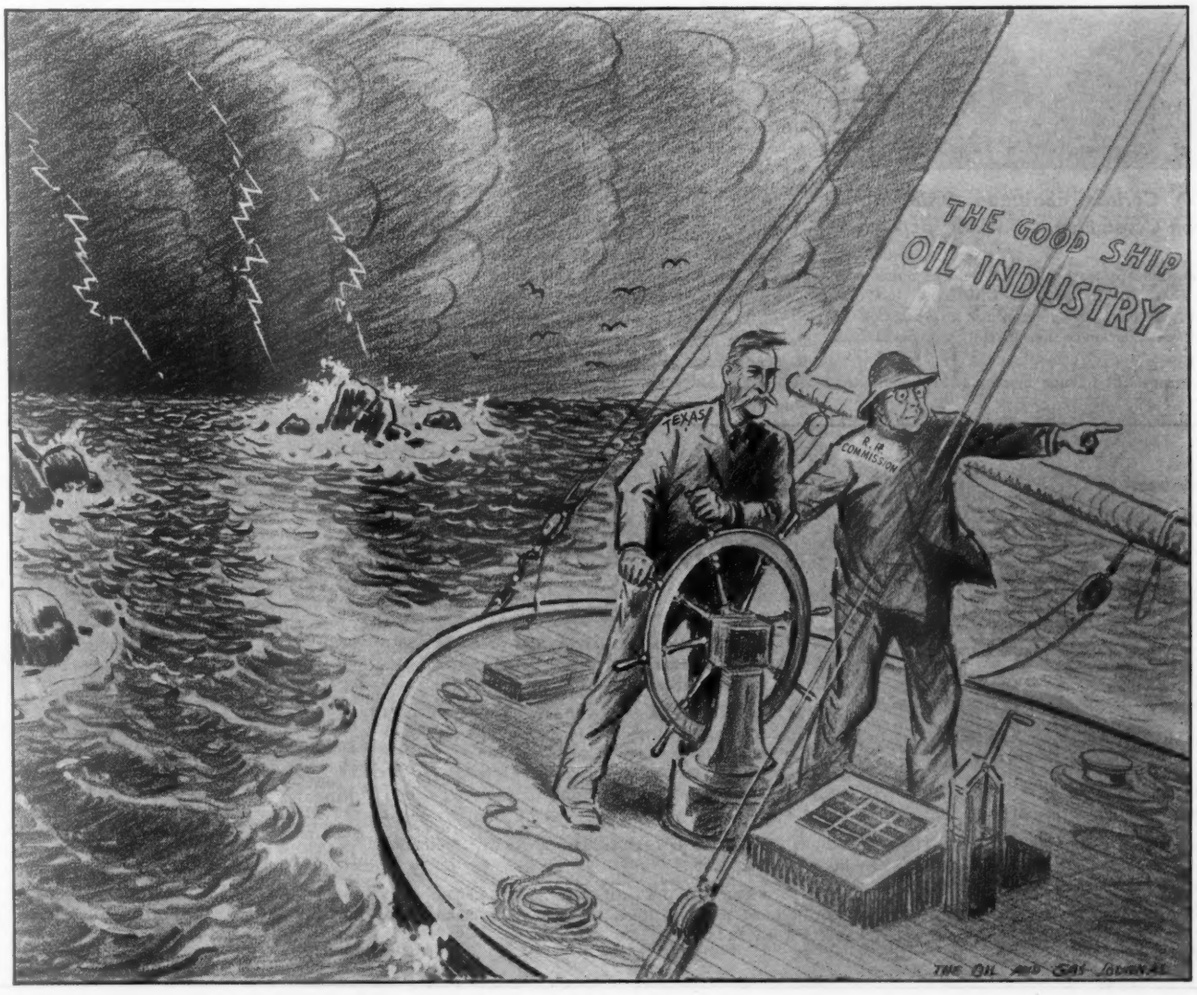
It was providing a legal instrumentality by which the refining branch can parallel the producing branch in correlating supply with demand, something that has not been available.

A background was being built which can be used again and again for similar meetings under like circumstances, with hope, if results justify present expectations, for a continuous program in the spirit of true conservation.

An opportunity for self-regulation within the law had been substituted for the demoralizing alternative which had been forced upon the industry.

Those who came to "just another meeting" departed with a different feeling. They understood.

Here was the forum.



Programs and Meetings

Manufacturers to Present Technical Papers at Houston Show

The Drilling and Production Committee for the Oil-World Exposition in Houston, Tex., April 24 to 29, will offer exhibitors of equipment and services opportunity to present semitechnical and technical papers at meetings sponsored by this committee. As brought out by George B. Corless, chairman of the committee, there

George B. Corless, chairman, Drilling and Production Committee, Oil-World Exposition

are data on the applications of oil-field equipment of vital interest to the industry on which the Oil-World Exposition will provide a forum for presentation of this type of information to men directly connected with field operations.

The program will include meetings throughout the week of the show. Papers will be limited to subjects that have a definite interest, both from a technical and practical viewpoint. Included will be discussions of the service facilities and organizations which exhibitors have to offer to consumers in obtaining desired results from their equipment. All papers will be passed on by the committee consisting entirely of men not connected with manufacturing or marketing of oil tools or machinery. The committee consists of G. B. Corless, chairman, Humble Oil & Refining Co.; M. Albertson, Shell Petroleum Corp.; Prof. Benjamin C. Craft, Louisiana State University; Prof. Howard E. Degler, University of Texas; Joe J. King, United Gas Pipe Line Co.; Ed Lenzner, ex officio, Oil-World Exposition, Inc.; Arthur G. Levy, Fohs Oil Co.; George L. Nye, Tide Water Associated Oil Co.; Prof. J. H. Pound, Rice Institute; Prof. Harry H. Power, University of Texas; James U. Teague, Humble Oil & Refining Co.; Prof. Harold Vance, Texas A. & M. College; Joseph Zaba, Rio Bravo Oil Co.

Exhibitors desiring to present papers should submit not later than January 15, 14 copies of the outline of the paper. The papers accepted for presentation must be in the hands of the committee not later than March 1. The author will be expected to furnish at least 500 copies of his paper, either mimeographed or printed, for distribution at the meeting.

J. C. Hunter New President Of Mid-Continent Group

Directors of the General Mid-Continent Oil and Gas Association at the annual meeting in Tulsa, December 19, voted to create two new positions—chairman of the board, and first vice president. J. D. Collett of O'Keefe & Collett, Inc., Fort Worth, who had been president for several years, refused because of health to accept reelection and was honored with the chairmanship. Judge J. C. Hunter of Abilene, Tex., until recently president of the West Central Oil and Gas Association, as well as a vice president of the Independent Petroleum Association of America, was elected president.

The new office of first vice president was filled by Robert S. (Bob) Kerr, Oklahoma City, now president of the Kansas-Oklahoma division.

The directors authorized formation of a committee on social security, and named John E. Winslow, Shell Petroleum Corp., St. Louis, general chairman, and R. M. Chan, Magnolia Petroleum Co., Dallas, general vice chairman.

S.A.E. Annual Meeting In Detroit, January 9-13

The program for the annual meeting of the S.A.E. to be held in Detroit at the Book-Cadillac Hotel, January 9 to 13, includes:

Monday, January 9

10 a.m.—Transportation and maintenance: "Safety Lane Testing," J. F. Winchester and J. J. Powelson, Standard Oil Co. of New Jersey; "Compulsory Vehicle Inspection From the Safety Viewpoint," Sidney J. Williams, public safety division, National Safety Council.

2 p.m.—Exhaust gas: Forum on exhaust gas analysis for members only. Informal discussions.

Tuesday, January 10

8 p.m.—Business session: Nomination and election of members-at-large of annual nominating committee. Announcement of election of officers for 1939. Presentation of life membership to past President R. R. Teetor.

Thursday, January 12

10 a.m.—Fuels and lubricants: "Power Loss Accompanying Detonation," Neil MacCoull, Texas Co.; "Spark Timing and Its Relation to Road Octane Numbers and Engine Performance," T. B. Rendel and L. E. Hebl, Shell Petroleum Corp.

2 p.m.—Fuels and lubricants: "Fuel and Lubricant Requirements for Gasoline Compression-Ignition and Spark-Ignition Oil Engines," J. B. Fisher, Waukesha Motor Co.; "Multi-Cylinder Engine Knocking and Distribution," A. J. Blackwood, C. B. Kass and O. G. Lewis, Standard Oil Development Co.

Friday, January 13

10 a.m.—Diesel engine: "Symposium on Piston Temperatures." E. T. Vincent, University of Michigan, will present a digest of a number of contributions on piston temperatures.

2 p.m.—Diesel engine: "Engine Indication With the Cathode Ray Oscillograph," J. G. Williams, Superior Engine division, National Supply Co.; "Duration of Combustion in a Commercial Diesel Engine," A. F. Robertson, R. A. Rose and G. C. Wilson, University of Wisconsin.

Louisiana Engineering Society To Meet With A.S.M.E.

The Louisiana Engineering Society is planning to hold its annual meeting jointly with the spring meeting of the American Society of Mechanical Engineers on February 23, 24, and 25, 1939, at the St. Charles Hotel in New Orleans, La.

CALENDAR

December.

CALIFORNIA OIL AND GAS ASSOCIATION, annual banquet, Biltmore Bowl, Los Angeles, Dec. 21.

January, 1939.

SOCIETY OF AUTOMOTIVE ENGINEERS, annual meeting, Detroit, Mich., Jan. 9-13.

February.

NATIONAL ASPHALT CONFERENCE, Los Angeles, Calif., week of February 27.

March.

AMERICAN SOCIETY FOR TESTING MATERIALS, committee week and regional meeting, Deshler-Wallick Hotel, Columbus, Ohio, Mar. 6-10.

INTERNATIONAL ACETYLENE ASSOCIATION, 39th Annual Convention, Houston, Tex., March 8-10.

INDIANA INDEPENDENT PETROLEUM ASSOCIATION, spring convention, Hotel Severin, Indianapolis, March 14-16.

AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS, 24th annual meeting, Skirvin Hotel, Oklahoma City, March 22-24.

April.

AMERICAN CHEMICAL SOCIETY, Baltimore, Md., April 3-7.

NATIONAL PETROLEUM ASSOCIATION, semi-annual meeting, Hotel Cleveland, Cleveland, Ohio, April 13-14.

OIL-WORLD EXPOSITION, Houston, Tex., April 24-29.

May.

PETROLEUM ELECTRIC SUPPLY ASSOCIATION, Houston, Tex., May 2-4.

PETROLEUM INDUSTRY ELECTRICAL ASSOCIATION, Rice Hotel, Houston, Tex., May 2-4.

NATURAL GASOLINE ASSOCIATION OF AMERICA, Hotel Tulsa, Tulsa, Okla., May 3-4-5.

AMERICAN PETROLEUM INSTITUTE, 9th mid-year meeting, Roosevelt Hotel, New Orleans, La., May 15-18.

June.

PENNSYLVANIA GRADE CRUDE OIL ASSOCIATION, Hotel Hershey, Hershey, Pa., June 15-16.

THIRTEENTH INTERNATIONAL CONGRESS OF CARBIDE, ACETYLENE, OXYACETYLENE WELDING AND ALLIED INDUSTRIES, Munich, Germany, June 25-July 1.

STATE CAPITALS

KANSAS

THE KANSAS CORPORATION COMMISSION had not announced what the allowable production of the state in December would be, up to this writing, and neither had it decided on the question of special allowables asked for by some companies and hotly objected to by other companies and by the Kansas Independent Oil and Gas Association. The final arguments on the question of special allowables were heard on Saturday at Wichita.

Attorneys attempted to obtain interpretation of the original proration statute passed by the legislature in 1931 as to whether or not the element of price entered into "reasonable market demand" the only duty granted to the commission in oil and gas administration with the exception of prevention of waste.

Opponents and advocates of special oil allowables differed on whether the element of price entered into the distribution of available crude oil demand; opponents stating that it was not reasonable demand unless it was a bonafide offer moving at the prevailing price, and advocates bringing forth proof that any consideration of price would cause the proration statute to be declared unconstitutional and mark the end of oil conservation in Kansas.

Judge W. D. Jochems, Wichita attorney and general counsel for the Kansas Independent Oil and Gas Association, argued that "the commission has passed on the element of price in every order written in the past, because the word price is considered in the word market."

STATE LAWS

Everyone with any interest in the oil industry should find value in a book about to be published by the mineral section of the American Bar Association dealing with the reactions between the legislative, executive and judiciary branches of state government in formulating, administering and adjudicating statutes covering the conservation of mineral resources. In starting this study it was not intended to confine it to the laws as they apply to the oil and gas industry but it has developed that a large portion of the material thus far prepared deals mainly with those laws.

The book is scheduled to be off the press early in January and will be entitled "Histories of Conservation" and the laws of several of the oil- and gas-producing states have been reviewed by attorneys, each recognized as an authority on the conservation laws of his particular state.

The review of Texas law has been made by Robert E. Hardwicke; Oklahoma, by W. P. Z. German; Arkansas, by H. Henry Rector; California, by J. Howard Marshall; Louisiana, by Yardell Boatner; Michigan, by Floyd A. Calvert; Mississippi, by H. V. Watkins and Ralph B. Avery; New Mexico, by Hiram M. Dow; Kansas, by I. B. Harris and the history of the gas laws of Texas by Maurice Check.

These historical reviews will furnish many interesting and valuable facts for guidance in every department of the oil and gas industry. Many questions arising concerning procedure can be answered by a study of the history of the law.

The mineral section of the American Bar Association is planning to publish a sufficient number of these books to supply the needs of the members of the bar belonging to that section. The committee in charge of this work is anxious to learn from everyone interested if there is justification for publishing additional copies for general distribution. Those interested are asked to write or wire to Stanley B. Houck, chairman of the mineral section, Northwestern Building, Minneapolis, Minn., or to James L. Shepard, Jr., chairman of the committee on publications, Esperson Building, Houston, Texas, giving their opinion. The book will retail for $2.50 per copy postpaid to all points in United States. Orders may be placed through the Book Department of The Oil and Gas Journal.

CALIFORNIA

CALIFORNIA OIL PRODUCERS in conformity with the existing emergency resulting from consistent overproduction of crude oil which has led to an accumulation of more than 30,000,000 bbls. of crude and refined oil in Pacific Coast territory, began reducing production in the past week. Union Oil Co. and Shell Oil Co. through the cooperative action of their partners and lessors started the ball rolling by reducing production of the Dominguez field. Maximum effect of the reduction in that field should become apparent within the next few days. Field committees throughout the California oil regions have been studying the situation during the past week and holding meetings. The objective of the present move is to reduce state production of crude oil to a minimum of 600,000 bbls. per day.

THE TAX PROBLEM of the Olson administration will contain demands for the imposition of the severance tax on petroleum and mineral production according to reports from Sacramento.

Both Governor-elect Culbert L. Olson and his chief financial advisor, Dr. H. Dewey Anderson, questioned witnesses at the budget hearing as to the advisability of severance taxes.

Walter W. Bradley, state mineralogist, was asked point-blank by Mr. Olson:

"Don't you think that there should be a severance tax at least sufficient to maintain the state Division of Mines?"

Mr. Bradley replied with an unequivocal "no" in respect to the gold mining industry, and declared that he believed a severance tax would also be undesirable in the case of California's other mineral products.

California's mineral products are widely varied, with gold accounting for $40,000,000 annually, oil and gas around $250,000,000, and other minerals about $100,000,000, according to Mr. Bradley.

Previous attempts to impose severance taxes in California have always met with vigorous opposition and defeat. It was accepted here as a foregone conclusion that an effort by Olson along this line will lead to a bitter fight in the legislature.

TEXAS

SATURDAY AND SUNDAY SHUTDOWNS in Texas oil fields will continue through January, February, and March. The Railroad Commission of Texas so decided at its meeting last week when it announced the allowable production in the state for January. The gross January allowable will be 1,735,514 bbls. per day, which will be cut to a net of 1,319,542 bbls. per day because of the four idle Saturdays and four idle Sundays. There will be five Saturdays in January, and on one of these five production will go on as usual, but there will be only four Sundays in that month, and only four Saturdays and four Sundays in each of the two other months.

The gross allowables in January were announced as follows:

	Bbls. per day
District 1, Southwest Texas	39,647
District 2, lower Gulf Coast	70,972
District 3, upper Gulf Coast	271,735
District 4, Southwest Texas	207,028
District 5, East Central Texas	30,116
District 6, East Central Texas	88,345
District 6, East Texas field	522,453
District 7-B, Central Texas	52,832
District 7-C, West Texas	29,517
District 8, West Texas	243,582
District 9, North Texas	84,184
District 10, Texas Panhandle	85,103
Total	1,735,514
Subtracted for shutdowns	415,972
Total net allowable	1,319,542

The order of the commission in establishing January allowables and extending the Saturday and Sunday shutdowns was signed by Chairman E. O. Thompson and Commissioner Lon A. Smith. Mr. Smith has in the past protested against the decisions of his fellow commissioners on the subject of curtailment of production, and his action in approving the new measure (which was necessary to make the order legal and operative) met with much favorable comment. The newly elected commissioner, Jerry Sadler, sat in at the meeting, but he does not take office until later.

John Miles, incoming governor of New Mexico, while anxious to increase the production of oil in his state, agreed that it would be better to wait until the next big consuming season before trying to do so.

Testimony before the commission indicated that the large holders of stored crude planned no more drafts on stocks, which may result in large runs from wells in the various fields in which oil is produced.

OKLAHOMA

GOV. ELECT LEON C. PHILLIPS will make a personal effort to induce governors of other oil producing states to join the Interstate Oil Compact. He was an interested listener at the compact conference at Fort Worth, Tex., last week. Mr. Phillips expressed the opinion that experience of the compact has been such as to make other states want to come in. "Texas has not tried to hog the deal as many states feared," he added. The next governor of Oklahoma announced that he would recommend renewal of the compact by the seventeenth Oklahoma legislature and would retain former Gov. W. J. Holloway as commission attorney and that Secretary Art Walker of the compact also would be retained, but he declined to discuss who would succeed Tom Anglin as Oklahoma's assistant representative on the commission.

Mr. Anglin, Holdenville attorney and former speaker of the house, was elected state senator from the Hughes-Okfuskee County district and will quit the commission position when he takes his senate seat.

Natural Gas News

El Paso Gas Co. Sells $6,000,000 in Bonds

El Paso Natural Gas Co. has sold privately a new issue of $6,000,000 first mortgage bonds, 3½ per cent series, due 1953, to a group of insurance companies and an educational institution and has obtained a loan of $4,000,000 from the Chase National Bank in the form of serial notes due over a period of seven years, Paul Kayser, president, announced.

Program Committee Named For A.G.A.E.M. Meeting

E. R. Guyer, of Chicago, president of the Association of Gas Appliance and Equipment Manufacturers, has appointed a program committee to draw up plans for the association's annual convention to be held at the Roosevelt Hotel, New York, May 24 to 26, 1939. Lucian Kahn, Estate Stove Co., Hamilton, Ohio, has been named chairman of the committee.

Serving on this planning group are F. E. Sellman, of New York, vice president of Servel, Inc.; E. C. Adams, president, Adams Brothers Manufacturing Co., Pittsburgh, Pa.; T. T. Arden, sales manager, Milwaukee Gas Specialty Co., Milwaukee, Wis.; R. L. Clewell, of the National Radiator Corp., Montclair, N. J.; J. Scott Fowler, president, Lovekin Water Heater Co., Philadelphia; Philip S. Harper, president Harper-Wyman Manufacturing Co., Chicago; Merrill N. Davis, executive vice president, S. R. Dresser Manufacturing Co., Bradford, Pa.; W. P. Hutchinson, president, Sprague Meter Co., Bridgeport, Conn.; W. P. Smith, vice president, Continental Water Heater Co., Los Angeles, Calif.

Germany Abandons Hope Of Obtaining Helium

HOUSTON, Tex.—That Germany has given up hope of obtaining helium from this country was indicated the past week when the return to that country of the large steel, high-pressure containers, in which the gas was to have been shipped, was started. The first shipment to be returned consisted of 206 containers, which were loaded aboard the freighter Idarwald. The remainder of the 2,000 containers which were brought to this country early this year when Germany was negotiating for the purchase of about 17,000,000 feet of helium and which have been stored at Manchester terminal at Houston are expected to be returned as quickly as boats are available.

The gas was to have been shipped by special tank-cars from the Government's helium extraction plant at Amarillo, Tex., to Houston, where compression equipment had been assembled at the terminal to transfer the gas from the cars to the high-pressure containers. The Government has held up sale of the helium to Germany on the grounds the gas might be used for war purposes.

Natural Gas Consumption Sets New Record

The marketed production of natural gas in 1937 exceeded general expectations and reached a new peak of 2,447,620,000 cu. ft., according to the Bureau of Mines. This total represents a gain of 13 per cent over 1936, the same relative increase as was registered in 1936 over 1935. Exports of natural gas declined materially, amounting to only 4,868,000,000 cu. ft., compared with 7,436,000,000 cu. ft. in 1936. Imports from Canada were 289,000,000 cu. ft., or almost double the 1936 figure.

Consumption, or marketed production less net exports, was 2,443,041,000,000 cu. ft., also a gain of 13 per cent over 1936.

The value of natural gas at the wells continued to decline, averaging 5.1 cents in 1937, compared with 5.5 cents in 1936. The downward trend in this average, which has been pronounced over the last decade, has been influenced largely by the increase in the proportion of low-priced Texas gas, the average of which has fallen as the ratio used in carbon black manufacture was increased. In 1937 the average field price was also influenced by Oklahoma's rise in production and decrease in average price, and, as in 1936, by a general lowering of prices in the eastern states. The average value at points of consumption also declined .4 cent, or from 22.0 cents in 1936 to 21.6 cents in 1937. This decline was due entirely to lower quotations for industrial gas as the average for both domestic consumption (from 73.3 cents in 1936 to 73.6 cents in 1937) and commercial consumption (48.1 to 48.7 cents) increased over 1936.

Of the 2,443,041,000,000 cu. ft. of gas consumed in 1937, 691,320,000,000 cu. ft. (28 per cent) was used for field purposes; 371,844,000,000 cu. ft. (15 per cent) was used by domestic consumers; 117,390,000,000 cu. ft. (5 per cent) was used by commercial consumers; 341,085,000,000 cu. ft. (14 per cent) was consumed in the manufacture of carbon black; 170,567,000,000 cu. ft. (7 per cent) was consumed at electric public utility power plants; 113,005,000,000 cu. ft. (5 per cent) was consumed as petroleum refinery fuel; leaving 637,830,000,000 cu. ft. (26 per cent) consumed for other industrial purposes. Compared with 1936 these data reflect chiefly gains in carbon black and refinery uses at the expense of domestic consumption and field use.

The number of domestic and commercial consumers in natural gas increased from 8,674,000 in 1936 to a new high of 9,028,000 in 1937. Of these consumers, 2,410,610 used mixed gas in 1937, compared with 2,752,690 in 1936. The gain in consumers in 1937 was general, with the largest increases in California and Illinois.

The industry was operating 53,960 gas wells at the beginning of 1937, 2,834 new wells were drilled, 2,354 were abandoned, leaving 54,440 active at the close of the year. The number of abandonments was higher than in 1936, but the ratio to wells drilled was lower.

The total interstate (and export) movement of natural gas in 1937 was 687,480,000,000 cu. ft., or 20 per cent more than in 1936. Practically all the major movements increased in 1937, the gains in the movements to Michigan, out of Kentucky and across the Louisiana-Texas line being outstanding.

Zoning Proposed for Sweet Gas Area of Panhandle

AUSTIN, Tex.—Division of the sweet gas area of the West Panhandle field into two zones for proration purposes was proposed at a Railroad Commission hearing here last week. The proposed south zone would contain 183,000 acres of the total sweet gas area of 801,000 acres and embrace acreage owned principally by two operating companies, Canadian River Gas Co. and Panhandle Eastern Pipe Line Co. The north zone, containing 618,000 acres, would embrace the area in which ownership of land is diversified and in which there are many operators.

The plan proposed by Canadian River and not protested by the other owners calls for a proration order of the north zone based on 640-acre drainage units with a proration formula similar to that in effect in the sour gas area, namely allocation of one-third on potential and two-thirds on acreage times rock pressure. No proration order was thought necessary for the south zone due to the absence of drainage and elements of waste.

Pipe Line Activity

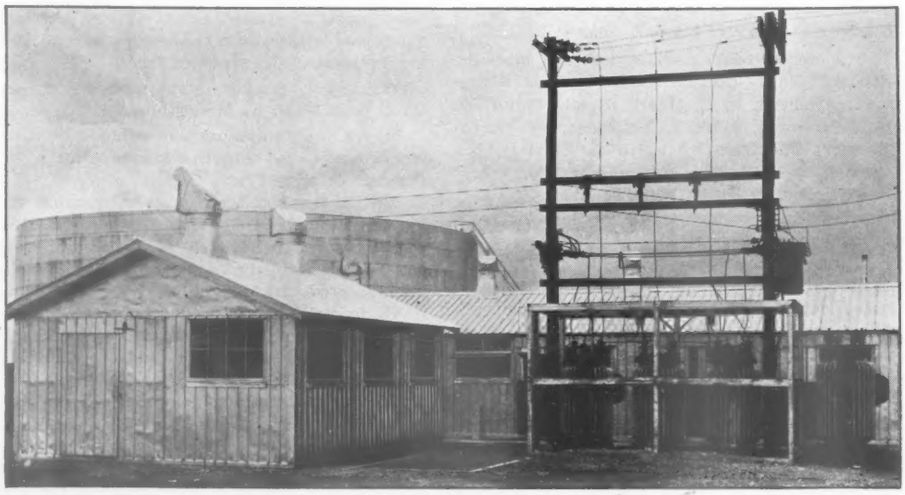
Laying 28-Mile 8-Inch Line In Clare County, Michigan

SAGINAW, Mich.—Construction of a 28-mile 8-inch pipe line from the new Freeman-Redding oil field in Clare County to Mount Pleasant, at a cost of $168,495, has been authorized by the Michigan Public Utilities Commission. The line, to be built by Michigan-Toledo Pipe Line Co., a subsidiary of Standard Oil Co. of Ohio, will connect at Mount Pleasant with the company's main line to Toledo refineries.

The new pipe line will more than double the possible daily "take" from the Freeman-Redding pools, where December 1 there were 33 producers with an average daily output of 8,463 bbls.

Cities Service Purchases Interest in Bell Line

Cities Service Oil Co. has purchased the half-interest of the Bell General Pipe Line Co. in a gathering system in north half of the East Texas field, paying a reported $325,000 cash. Other half-interest is owned by General American Oil Co. Prior to the sale, the Cities Service had contract with the Bell General for delivery of oil to its trunk system, paying a premium of 10 cents a barrel.



Gulf Pipe Line Co.'s station where oil is pumped to company's main station at Midland

Refinery Expansion

Oil Patent Suit Is Resumed in Detroit

DETROIT, Mich.—Trial of the patent infringement suit of the Gyro Process Co. against the Pure Oil Co., the Texas Co. and the Chemical Research Corp., which began last July, has been resumed in Circuit Court after two adjournments.

The suit involves patent claims growing out of a gasoline industry chemical process known as polymerization. Alex Ramage, developer of the process, is the current witness.

Alco Products also was named as a defendant in the suit but was never served.

Talco Refinery Will Reopen Within Two Weeks

AUSTIN, Tex.—The Texas Railroad Commission was advised today that the Talco refinery would reopen within two weeks, following a commission order increasing the supply of oil to the refinery.

During the coming two weeks, Manager MacKinnon telegraphed Chairman Ernest O. Thompson, all employes will be kept on with repair work. The refinery was closed down, it had been announced, because of lack of crude supply, and as soon as this lack was called to the commission's attention allowable of the Talco field was increased.

Mankins Oil Refinery Placed in Operation

WICHITA FALLS.—Operations have been started at the new refining plant of the Mankins Oil & Refining Co. near Mankins, in Archer County, serving wells in the Ferguson area of the K.M.A. field. The plant is equipped with high pressure tube stills, is modern in every respect and fully equipped to manufacture high grade crude refined products.

With a capacity of 1,500 bbls. daily, the plant will begin taking 1,000 bbls. a day, which is expected to meet the requirements at present. The 4-inch pipe line from the plant to the wells in the Ferguson area of the K.M.A. field, a distance of 6 miles, has been tested.

Headquarters of the Mankins Oil & Refining Co. are located in Wichita Falls.

Leonard and McClanahan Directors Decide to Merge Companies

SAGINAW, Mich.—In separate meetings in Detroit, stockholders of Leonard Refineries, Inc., and McClanahan Refineries, Inc., voted to merge the two firms. The Leonard company operates a refinery at Alma, Mich., and the McClanahan company another at St. Louis, Mich., 3 miles distant.

Heading the new concern, in which the Leonard interests absorb the McClanahan properties, will be J. W. Leonard, Jr., of Mount Pleasant.

Stockholders of the consolidated company, which will bear the Leonard name, will meet in three weeks. The annual meeting has been set for June.

L. M. Johnston to Supervise Building of New Refinery

The man who has built and operated some of the most successful refineries in this country has been hired to construct the first cooperative refinery in the United States—the 3,000-bbl. plant which Consumers Cooperative Association, North Kansas City, Mo., will erect in northwest Kansas this winter. He is L. M. Johnston of Parco and Cheyenne, Wyo.

Born at Wolfe City, Tex., April 23, 1891, Mr. Johnston received his education in the Lone Star state, finishing A. & M. College in 1913 with a Bachelor of Science degree, and a year later getting a degree in mechanical engineering from the same school. After graduation he went with one of the major oil companies at Port Arthur, Tex., remaining there until 1922 on design, construction and experimental work.

In 1922 he went to work for an engineering corporation in New York City which had the contract to build a light oil and lubricating plant in Parco, Wyo., for Producers & Refiners Corp. He went to Parco in 1923 as an engineer during the construction of that plant. Some time after the plant was constructed, he became superintendent, managing the plant and the 156 dwellings and business buildings until September, this year.

L. M. JOHNSTON

Mr. Johnston is an active member of the American Petroleum Institute, a member of the American Society of Mechanical Engineers, and a member of the American Society of Chemical Engineers. He is listed in the 1937 edition of "Who's Who in Engineering."

Iraq Government Considering Refinery Project for Royalty Oil

Proposals for construction of a new government-owned refinery in Iraq to process royalty crude from present and future fields are to be invited soon, according to information received from London last week. Extensive examination of the various crude oils to be handled in the refinery is now under way. As soon as these tests have been completed which will give definite information in regard to the types of refining equipment which will be desirable bids for the construction of the plant will be invited.

The Iraq Government refinery project has been discussed for several years but never has the plan appeared to be so near execution. The cost of a refinery of the type the Iraq Government is tentatively considering is estimated at $3,000,000 to $5,000,000. Design would be governed to some extent by the capacity of 6,000 bbls. per day available to the government now or anticipated. Emphasis probably will be placed on production of asphalt and road oils since the highway construction program in Iraq is of immediate concern. The tentative site selected for the refinery is at Baiji where K-2 pump station of Iraq Pipe Line Co.'s system is located. Kirkuk was rejected as a refinery location because of defense considerations and Bagdad because of transportation costs from the producing fields. Baiji is at the junction of pipe line, river, railroad and highway facilities. Royalty crude from Kirkuk can be delivered via the pipe line at this point and via the line from Qaiyarah by the River Tigris.

Iraq's internal petroleum requirements total only about 4,000,000 bbls. annually, but the small output of the Khanaqin refinery supplies only about 20 per cent of the demand.

Ohio State University Hears Dr. Egloff Lecture on Oil Industry

CHICAGO.—Dr. Gustav Egloff, director of research of Universal Oil Products Co., was the lecturer at the annual meeting of the Research Foundation of Ohio State University, Columbus, Ohio, on December 15. The audience was made up of faculty, students, and the public.

Doctor Egloff's subject was "Research in the $13,000,000,000 Oil Industry."

Natural Gasoline

Jack County, Texas, Gasoline Plant To Be Built at Cost of $100,000

BRYSON, Tex.—The first gasoline plant for Jack County, one of the oldest oil-producing counties in the North Texas district, is being rebuilt and will be ready for service shortly after the first of the year.

The new processing plant is a joint operation of Hanlon-Buchanan, Inc., of Tulsa; Hamilton Petroleum Co., of Wichita Falls, Tex.; and Hammon-Herbert Oil Co.

The plant is to be located on the W. B. Hamilton 19-acre tract, 6 miles southeast of Bryson. Contract has been let to the Frick-Reid Supply Corp., of Tulsa. Approximate cost of the plant will be more than $100,000.

The plant will be one of the most modern in North Texas and will start off with a daily processing capacity of 3,000,000 cu. ft. daily from gas from nearby wells. Gas will be returned to the reservoir after the gasoline has been extracted.

Ickes Issues Warning of Depletion by Waste

WASHINGTON, D. C.—In his annual report to President Roosevelt, Secretary Ickes warned that depletion is rapidly approaching unless oil producers are "more careful." Commenting on Bureau of Mines tests to make a synthetic oil from coal, the secretary said:

"By the time our oil fields approach depletion (and I have been insisting for years that unless our oil producers are more careful this day is rapidly approaching), it is hoped that motor fuel from other sources can be supplied so efficiently and cheaply that the transfer can be made without drastic economic disturbance."

Experiments with the Bergus coal hydrogenation process have been in progress at the Pittsburgh experimental plant for more than a year. Officials of the bureau report no sensational developments and make no predictions as to the success or need for synthetic oil.

"We are merely seeking a substitute to use when our petroleum is gone—whenever that may be." The Pittsburgh laboratory has been able to produce a small quantity of oil from coal but the cost is yet uneconomic.

W. N. Bissell Chairman of Personnel Committee

William N. Bissell has been appointed chairman of the committee on personnel practices of the American Gas Association by Conrad N. Lauer, president. Mr. Bissell has been personnel manager of the eastern division of Niagara Hudson Power Corp. for eight years.

Crude Estimates for January 3,270,600 Barrels Daily

WASHINGTON, D. C., Dec. 20.—The daily average supply of domestic crude oil estimated by the Bureau of Mines to meet the market demand in January, 1939, is 3,270,600 bbls. This is 35,200 bbls. (1 per cent) less than the estimate for December and 3 per cent lower than actual demand in January, 1938. The decline is due chiefly to provision being made for an increase of only 5,500,000 bbls. in gasoline stocks, compared with an increase of 9,222,000 bbls. in January, 1938. Higher runs than anticipated in the last quarter of 1938 will result in larger refined inventories at the end of the year than expected, increasing desirability of curtailing operations in the first quarter of 1939.

The apparent excess of 101,000 bbls. daily in crude demand was due primarily to larger runs to stills than estimated, resulting in an increase of 1,200,000 bbls. in gasoline stocks in November, whereas the bureau had contemplated no increase.

The estimate of motor-fuel demand for January is 36,230,000 bbls., an increase of 3 per cent over actual for January, 1938. Motor-fuel exports are estimated as 3,400,000 bbls., 100,000 bbls. higher than December. Stocks of finished and unfinished gasoline on October 31 totaled 69,277,000 bbls.

Estimated daily average crude demand in January by principal states follows: Texas, 1,332,900 bbls.; California, 588,400; Oklahoma, 499,700; Louisiana, 241,900; Kansas, 153,900; New Mexico, 95,800; Illinois, 86,100; Wyoming, 66,800; Arkansas, 49,000; Michigan, 47,400; Pennsylvania, 42,300.

Roscoe G. Ayres Joins Bethlehem Supply Corp.

Since coming to the oil fields 18 years ago, Roscoe G. Ayres, recently selected sales manager for Bethlehem Supply Corp., has been occupied with the sale and installation of oil field machinery and equipment. Seventeen years of that time has been spent with National Supply Co. in positions varying from salesman to assistant to the division sales manager, the title he is resigning to take his new post.

R. G. Ayres, sales manager of the Bethlehem Supply Corp.

Mr. Ayers is a registered professional engineer and is executive vice president of the Engineers Club of Tulsa and a member of the American Society of Mechanical Engineers. He is also a member of the American Petroleum Institute, the Technical Club and the Tulsa Club.

THE MARKETS*

CRUDE OIL: *The market was further unsettled this week by a 14-cent cut in Michigan crudes, resulting from underselling in the Bloomingdale pool. Olney Oil & Refining Co. announced a reduction of 10 cents on oil from Young and Archer counties in North Texas, explaining the demoralized refinery market made the step necessary. It buys 1,000 bbls. a day. The week's developments have increased concern regarding Illinois, where crude is reported to be moving at prices below posted schedules.*

REFINERY: *Notwithstanding a statistical position which many view as encouraging, irregularity prevailed over wide market areas. Gasoline consumption maintains a high rate, and a slight firming of prices was observable on the eastern coast, but quotations were off in interior regions. The low prices are especially disquieting in view of the higher manufacturing costs involved in the current movement to raise antiknock values. Light fuels and kerosene off as a result of mild temperatures.*

TANK-WAGON AND POSTED DEALER: *Local adjustments made by Standard Oil Co. of Ohio in five Ohio counties. Only scattered changes otherwise.*

FINANCIAL: *Oil shares generally behaved better than most of the rest of the market. Sun touched a new high for 1938. Average of 30 representative stocks for week ending December 17: High, 29.21; low, 27.57; close, 28.63. Week ending December 10: High, 28.59; low, 27.42; close, 27.83.*

**Detailed information in market section.*

Magnetic Storm

Tucson, Ariz., observatory of the U. S. Coast and Geodetic Survey reports a moderate magnetic storm began at 8 p.m. December 16 and ended at 10 a.m. December 19, central standard time.

E. M. Smith Disposes of His Stock in Emsco Company

The Youngstown Sheet & Tube Co., of Youngstown, Ohio, and the Republic Supply Co. of California have acquired a substantial stock interest in the Emsco Derrick & Equipment Co., of Los Angeles, Calif., including the purchase from E. M. Smith, former president of the Emsco company, of his holdings therein. Frank Purnell, president of the Youngstown Sheet & Tube Co., has been elected the new president of Emsco Derrick & Equipment Co. Emsco Derrick & Equipment Co. is one of the leading manufacturers of oil-well equipment and supplies, having plants in Los Angeles, Calif., and Houston and Dallas, Tex.

The Continental Supply Co., having branch stores and offices in all producing states except those on the Pacific Coast, has for a number of years been distributors of Emsco products and will continue as such in the area in which it operates. Continental Supply Co. is a subsidiary of Youngstown Sheet & Tube Co., with general offices in Dallas, Tex. The Republic Supply Co. of California, having stores and offices on the Pacific Coast, will continue as distributors of Emsco products in that area. The Continental-Emsco Co., a subsidiary of Continental Supply Co., exporting Emsco equipment from New York, will continue in that capacity. It is the purpose of the Youngstown Sheet & Tube Co. and the Republic Supply Co. of California, by bringing the manufacture and distribution of Emsco products into closer relationship, to serve all interests more effectively.

The negotiations for the purchase of this stock interest were handled by W. J. Morris, president of Continental Supply Co., and J. A. Crawford, president of Republic Supply Co. of California.

The directors of Emsco Derrick & Equipment Co. include Frank Purnell, W. B. Gillies, W. J. Morris, Frank I. Brinegar, J. A. Crawford, Thomas H. Beament, and W. D. Davidson.

Don F. Payte Promoted by National Supply Co.

Don F. Payte has been promoted from sales engineer to assistant division sales manager of the National Supply Co., according to an announcement made by the company last week. He succeeds Roscoe G. Ayers, who resigned to take the position of sales manager of the Bethlehem Supply Corp.

D. F. Payte, new assistant division sales manager of the National Supply Co.

Mr. Payte has been connected with National Supply Co. for the past 11 years, specializing in machinery distribution in Kansas and Oklahoma. He worked one year for Ingersoll-Rand Co. in the Seminole, Okla., district and for four years was connected with Phillips Petroleum Co. in the gas department at Breckenridge, Tex.

Obituaries

GEORGE WALLACE MILLER, 44, sales engineer of Universal Oil Products Co., died suddenly at his home in Tulsa, December 14. He had long experience in refinery operation and was well known throughout the refining industry, particularly in the Mid-Continent. He had been a member of the Universal organization since 1923, in the operation and sales engineering departments. Since 1934 his headquarters had been in Tulsa.

NICHOLAS V. V. FRANCHOT, II, 55, died at Niagara Falls, N. Y., December 14. Born in Titusville, Pa., he was the son of former State Senator Stanislaus P. Franchot.

EARL H. GUNN, 41, superintendent of the Col-Tex refinery at Colorado, Tex., died of heart disease December 15.

EARLE F. PATTERSON, 56, died at a Muskogee, Okla., hospital of burns received in a fire in his apartment.

Monopoly Probe Is Seeking Facts, Not Prosecutions

By HENRY D. RALPH

WASHINGTON, D. C., Dec. 19.—With the temporary national economic committeen recessed for the holidays after its first three weeks of hearings, it is possible to see the apparent course of the so-called monopoly investigation.

The committee has taken a legal monopoly—the patent grant—and shown how it can be used for private regulation of competition far beyond the intent of Congress when the patent laws were enacted. The example used was the glass-container industry, though it was indicated more or less similar conditions could be found in many other industries. Having demonstrated the existence of a condition, the next step will be suggestions for changes in the laws to be submitted by various federal agencies working with the committee. Following that, a report will be made to Congress, and, presumably, legislation will be drafted and hearings held while the committee goes on to other aspects of the general subject of the regulation of competition.

The next subject taken up when the committee resumes hearings in January probably will be the way in which competition has been reduced in some industries through the purchase of competitors by strong corporations, a subject which the Federal Trade Commission has been agitating for some time without arousing much interest from Congress. The F.T.C. has recommended that the Clayton antitrust act be amended to prohibit a corporation from purchasing the assets of a competitor where the result would be to concentrate more than a certain percentage, say 10 per cent, of the business of the industry in a single concern. By showing some examples of how competition has been reduced through purchase, the F.T.C. may lay the groundwork for legislation along this line.

Courtroom Manners Out

One general observation stood out through the patent study. That is, that the majority of the members of the T.N.E.C. do not want to conduct the investigation like a criminal proceeding and are more interested in getting a general picture than in probing into details of the business operations of individual companies. The Department of Justice had worked up the patent case and presented it in courtroom manner, with witnesses interrogated by a department prosecutor, but time and again committee members interrupted the questioning, sometimes rephrasing the questions, sometimes suggesting explanatory answers to the witnesses, sometimes criticizing the prosecutor for the tone and nature of his questioning. The committee attempted to treat the witnesses with the greatest friendliness and at the conclusion praised them for their cooperation. Several of the witnesses were obviously quite relieved at this turn of events and expressed their pleasure that the committee had not attempted to "hang anything on them" in the way of law violations or reprehensible deals. Whatever the Department of Justice may have intended, the result was that the committee appeared to treat all the disclosures as a legal and natural result of the operation of the patent system, as a trend to be corrected by Congress rather than the courts.

The glass container industry was shown to be completely dominated, through patents, by two concerns. Through cross-licensing of patents and other interlocking arrangements these two concerns have been able to restrict the number of producers, prevent new companies from entering the field, limit certain companies to the types of glassware they may produce and to whom and in what localities they may sell, and to a degree control the prices of glass containers of all sorts.

Private N.R.A.

A sort of private N.R.A. was the way in which Chairman O'Mahoney characterized the situation in the glass industry, a use of patents to adjust and allocate production and control competition. As a matter of fact, some of the witnesses as much as admitted this, justifying their actions on the ground that it is beter for business men to regulate their industries than to have the Government do it. Thus the glass industry illustrates what may prove to be the crux of the entire monopoly investigation, namely, the question of whether competition should be regulated by the Government or by business men, or to what extent by either.

What changes in the patent laws may be recommended as a result, and how these might affect other industries, is still in the realm of conjecture. A number of suggestions for altering procedure in the patent office and in ensuing patent litigation cropped out during the hearings but were not discussed in detail. But beyond these it is obvious that the committee will consider the broader questions of the effect of patent controls on cometition and business generally.

Chairman O'Mahoney himself raised a number of points for consideration, saying: 'It may be asked, for example, whether or not patentee should be allowed to retail the power to attach restrictions as to production or price in any licenses that may issue for the use of devices protected by patent. Another question is whether Congress should allow patents to issue upon basic processes many years after such processes have been in active use in an industry. Again, should there be any distinction in the treatment which

SENATOR JOSEPH C. O'MAHONEY

Chairman of Temporary National Economic Committee

Congress should accord to a natural person, an inventor, who himself develops a device and that which should be accorded to a group?"

Use of Patent

One fact which was brought home during the patent hearings is that under present conditions few important inventions are made by individuals working independently, but the great bulk of new products and processes come from the research laboratories of big concerns faced with actual operating problems. Patents, of course, can be issued only to individuals and not to corporations, but practically all patents of much immediate value to industry are assigned to corporations before they are issued, and as the property of corporations they can be used to regulate competition. That this is not always done was shown by the committee's examination of patents in the automobile manufaeturing industry, taken up just prior to the glass container industry. In automobiles, patents play no part in the competitive situation because of that industry's system of free cross-licensing under which, with a few exceptions, a new development brought out by one manufacturer is available to the entire industry after a very limited period.

The contrast between the automobile and the glass container industries was not drawn by the T.N.E.C. to show that the auto makers are more socially minded or the glass makers more monopolistic at heart, but to demonstrate that patents can be used for purposes other than that ascribed in the Constitution "to promote the progress of science and the useful arts," that patents are being used in some industries as a device for regulating competition.

As far as is now apparent, the pattern of investigation set by the patents phase will be followed by the T.N.E.C. in studying other ways in which the vigor of competition has been reduced. Certain industries will be selected as examples and business executives will be subpoenaed to explain things to the committee, but the prevailing attitude will be that of economic research rather than of a grand jury investigation.

INTERNATIONAL

Petroleum Plays Important Part at Lima Conference

The dominating part played by petroleum in the Pan-American Conference deliberations at Lima, Peru, is being disclosed through correspondents' reporting the meeting. Direct reference to petroleum has been carefully avoided by the delegates or the dispatches have been incomplete in that respect. Yet, there is not an economic or diplomatic observer studying proceedings of the conference who does not recognize or feel the powerful undertone of petroleum as a pawn in the negotiations. The vigor with which Mexico has pressed for adoption of its policy of compelling investors to renounce protection from their governments is not new but was one of the first steps taken to strip American oil companies of a means of safeguarding their investments abroad. South American nations which still need the technical skill of American engineers and American capital to develop their resources are not in immediate sympathy with the Mexican program.

The realization is all too plain that American capital is already on the verge of flight or retrenchment because of treatment accorded oil companies in Bolivia, Mexico and Argentina. If Mexico does not relax its policy toward American and British oil companies—and it has given repeated assurance that such is beyond consideration—companies will exercise increasing caution in future dealings with South American governments. Venezuela and Colombia, where oil companies have enjoyed reasonably satisfactory relations with the governments for years, are not sympathetic with Mexico's attitude. One of the chief reasons for this lack of support, the Lima conference correspondents report, is that both countries are still highly dependent on American capital for current revenue and for much needed development of resources.

While the oil industry represents only one phase of American financial investments in South America, treatment accorded the petroleum concerns is considered symbolic of future dealings up and down the entire list. Strength of the petroleum industry, the apparently endless demand and relatively quick availability of funds from its sale, have made it a prize to be desired by the countries with nationalistic tendencies. Furthermore, the skill of American engineers, efficiency of American equipment and the ready salability of products has made the petroleum industry appear to Latin Americans a relatively simple means of attaining wealth. In addition the development in Mexico had been carried to the extent that the petroleum industry appeared to be a healthy institution perfectly capable of standing on its own and sufficiently lucrative to produce the necessary funds for future expansion.

International oil companies with billions of dollars invested in South American countries where they are still permitted to operate are not unmindful of the conditions which finally induced Mexico to seize the private properties and launch the petroleum industry as a nearly 100 per cent government project. They consider the action of Mexico as perhaps typical of the treatment which may be expected from other South American countries as soon as development has reached an adequate stage and unless the United States Government is committed to a policy of protecting its nationals and their investments.

The assertion is made in numerous quarters that Secretary of State Hull's pronouncement for prompt and adequate settlement for expropriated lands of United States citizens has been practically emasculated by the agrarian "agreement." The obligation assumed by Mexico also contains numerous contingencies such as continuation of the United States silver purchasing program without which Mexico would be deprived of something like $6,000,000 annually in direct benefits. The obligation to pay also makes reference to Mexico's financial ability which has been reduced to no value through a long series of debt defaults over a period of many years.

The United States efforts to obtain Pan-American conference approval of an alliance among participants for joint resistance of any aggression irrespective of its source is apparently aimed at autocratic nations with special reference to Germany and Italy with Japan as a close third. For this reason, if no other, it was believed in this country that the recently concluded barter deal between Germany and Mexico by which Germany will receive oil valued at approximately $17,000,000 over a period of months probably did more to bestir the State Department on the petroleum expropriation question than any development since March 18. Most of the delegates were enroute to Lima when the facts of the most recent barter deal between Germany and Mexico were disclosed.

New High Gravity Field Probable In Venezuela

Development of another new high-pressure, high-gravity oil field in the north central part of eastern Venezuela loomed as a probability last week when Standard Oil Co. of Venezuela No. 1 El Roble blew out between two strings of casing. When the blowout occurred the hole was bottomed at 9,500 feet and operators were waiting on cement to set around the last string of pipe landed a short distance off bottom. The blowout developed between the lowest and the next deepest strings of pipe.

Operators had not succeeded in shutting in the well when last reports were received. From sources other than the operators the well was reported showing pressure estimated at 3,000 pounds per square inch and blowing approximately 1,800 bbls. of oil per day. It was pointed out, however, that under high pressure the volume of fluid is frequently deceiving.

The apparent discovery is on property originally owned by Pantepec Oil Co. of Venezuela. The latter company retains a half interest under a development contract with Standard of Venezuela. Operators were moving in steam boilers and engines preparatory to efforts to bring the well under control. Until this work is completed it will not be possible to obtain a more accurate calculation on the pressure or volumes of oil and gas.

The well has been drilled "tight," but reports were circulated at various times during the progress of operations that showings of oil had been encountered, the last rumor being distributed when drilling was temporarily halted at about 6,500 feet.

The potential discovery is about 15 miles northwest of Cantaura and about the same distance east of Aragua de Barcelona in the north central part of Anzoategui. The El Roble concession is surrounded by Mene Grande land.

Crude oil production from Venezuela suffered a slight decline last month, dropping to a daily average of 536,,058 bbls., compared to 552,058 bbls. for October and against 543,942 bbls. for the same month a year ago. The Lake Maracaibo fields were chiefly responsible for the decline registering total output of 11,929,465 bbls. during November, compared to 12,861,164 bbls. in October. This decline was recorded despite an increase from 77,148 bbls. in October in the Bachaquero field to 304,068 bbls. in November. The Lake Maracaibo district alone registered a decline of 16,000 bbls. in daily average production.

The accompanying production table indicates that La Rosa field has suffered the most severe slump. It is significant to note that Standard Oil Co. of New Jersey subsidiaries, Lago and Creole, are reporting all their Lake Maracaibo production as a lump sum and show no break-down between Lagunillas, Tia Juana, and La Rosa which is probably a more important factor. It is the consensus that Lagunillas production has suffered the most substantial decline of all Venezuelan fields during the past year.

The inclusion of Temblador and Bachaquero as new shipping fields since 1937 is significant since the combined output of the two areas is nearly 500,000 bbls. per day.

The production by fields, with the noted exceptions, and by companies follows:

VENEZUELA OIL PRODUCTION
(By fields in barrels)

	November 1938	November 1937	Daily average November 1938
Lagunillas	*8,164,095	7,991,633	272,137
Tia Juana	2,500,533	2,274,139	83,351
Quiriquire	1,999,033	2,141,508	66,634
La Rosa	960,769	2,233,933	32,026
Mene Grande	937,915	1,287,678	31,264
Tarra	468,953	368,235	15,632
Bachaquero	304,068	.....	10,136
Cumarebo	208,309	195,284	6,944
Temblador	188,207	.....	6,274
Pedernales	179,760	142,404	5,991
Concepcion	68,269	83,010	2,276
Lapaz	51,452	78,331	1,715
El Mene	50,340	66,030	1,678
Total	16,081,703	16,862,185	536,058
Daily average, November, 1937			543,942
Total for October, 1938	17,113,800		
Daily average, October, 1938	552,058		
(By companies)			
Venezuela Oil Co.	5,548,326	5,220,833	184,944
Lago Petroleum Corp.	4,409,634	5,229,476	146,988
Standard of Venezuela	2,716,458	2,832,112	90,549
Mene Grande Oil Co.	1,898,000	1,809,000	63,267
Caribbean Petroleum Co.	937,915	1,287,678	31,264
Colon Development Co.	468,953	368,235	15,632
British Controlled	50,340	66,030	1,678
No. Venez. Pet.	52,077	48,821	1,736
	16,081,703	16,862,185	536,058

*Includes Lago and Creole production in all Lake Maracaibo fields.

ENGINEERING and OPERATING

In This Issue

MAGNOLIA COMPLETES LARGE SALT WATER DISPOSAL PROJECT
By Paul Reed ..... *Page 30*

Because the disposal of salt water produced from oil wells has assumed a growing importance during recent years when it has been found necessary to get rid of large quantities by underground injection, the construction of a large project for this purpose by a major company is studied with a great deal of interest. Features incorporated in the Magnolia Fitts pool plant may be regarded as important in the evolution of brine injection practices.

SAFETY—WHILE ELEVATING DRILL PIPE ..... *Page 37*

Greater speed in rotary drilling under present conditions calls for more attention to details connected with the operation of a modern rig which contribute to the safety of the crew. In this discussion of situations which exist while elevating the drill pipe, comment is made particularly in regard to the positions and movements of the crew.

STRATIGRAPHIC VERSUS STRUCTURAL PROSPECTING FOR OIL
By E. E. Rosaire ..... *Page 43*

At a time when the oil industry is seeking new exploration techniques, special significance is attached to a discussion of the relation of the rate of discovery of new fields on the Gulf Coast to the methods which have been adopted by oil companies. Costs of geophysical exploration during different periods are shown so that comparisons can be made between expenditures and results. An analysis is presented showing a contrasting situation in the automobile industry due to the effect of retooling programs. Comment is made on results obtained with the use of transitional electrical fields in oil exploration.

METAL PROGRESS—*By W. L. Nelson* ..... *Page 39*

OPERATING IDEAS ..... *Page 40*

QUESTIONS ON TECHNOLOGY—*By C. K. Francis, Ph.D.* ..... *Page 60*

PROBLEMS FROM READERS—*By L. G. E. Bignell* ..... *Page 62*

Magnolia Water Project

Advance in Disposal

By PAUL REED

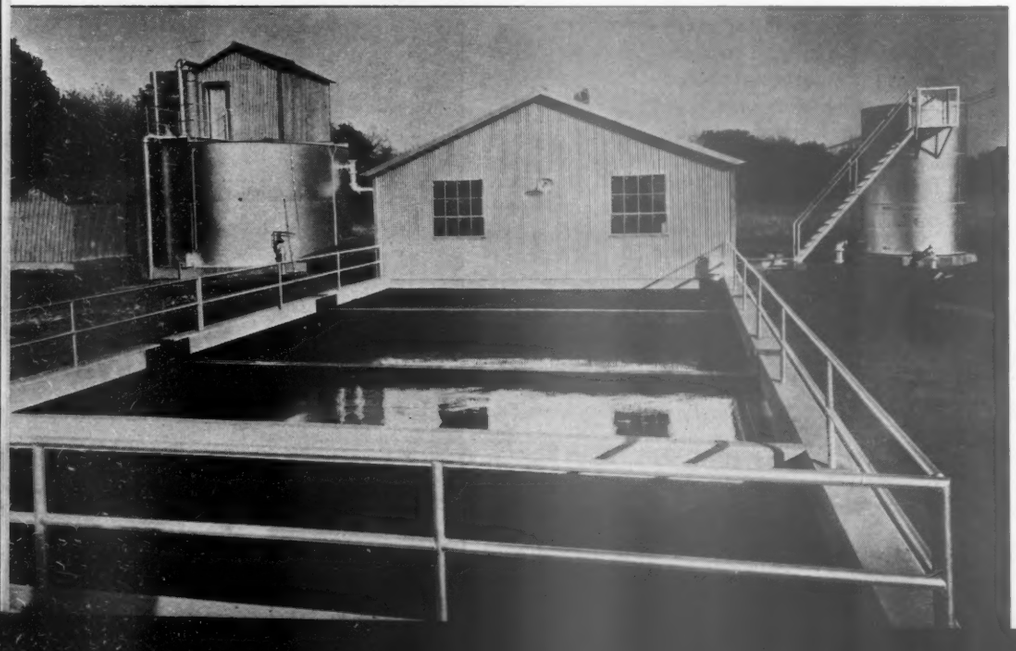
The brine disposal project, recently completed by the Magnolia Petroleum Co. in the Fitts pool, Oklahoma, is the result of careful preliminary studies and economical construction practices directed toward the safe disposal of increasingly large quantities of salt water at a low ultimate cost. The design and operation of this project promise to furnish significant contributions to that branch of production engineering which is concerned with the injection of salt water into underground formations.

This project is notable for several reasons. While, at present, it is not the largest disposal project in the Fitts pool, provisions for handling greater volumes in the future entitle it to stand as one of the larger salt water disposal projects constructed by the oil industry. Costs have been held down by liberal and ingenious use of old production and drilling equipment from the company's junk yard. Special provisions have been made to safe guard the gathering system against the dangers incident to severe conditions which occur at certain seasons of the year. In construction of the gathering system, measures have been taken for increasing delivery capacity in the future, when the amount of salt water to be handled will exceed the capacity of the present lines. Provisions have been made for cleaning every line of foreign material accumulating in the system. Treating of brine before injection into the disposal well is done by a stabilizing process requiring settling basin space which is a fraction of the size of that ordinarily used in handling such quantities of salt water by the usual methods. Another unusual feature of the project is the fact that it showed a profit before it was completed because two wells, drilled in an attempt to furnish a disposal well, turned out to be profitable oil-producing wells. To get a real dry hole suitable for use as a salt water disposal well it became necessary to drill a third well. The Magnolia project has been planned as the result of observation of brine disposal plants in Oklahoma, Kansas, and Texas, and of experiments carried on to ascertain the type of plant required for local salt water conditions. Preliminary observations, experimental work, design, and construction of the project were completed with the able assistance of W. L. Montgomery, civil engineer of the engineering department of the Magnolia Petroleum Co.'s Dallas office, and other members of the Magnolia organization, under the supervision of Halbert M. McClain, petroleum engineer, who is a chemist as well as an engineer, for the Oklahoma production division of the Magnolia Petroleum Co.

Plans for Project

In planning the project, the capacity was determined on the basis of the experience of the company in other fields in the vicinity of the Fitts pool, where there are 100 or more company wells. Such data indicated that the system would be expected to handle ultimately an average of 100 bbls. of water per day per well. When plans were drawn, the company had 192 wells in the Fitts pool. Comment should be made in passing that the drilling-in of wells upon completion, in the Fitts field, was given more attention than in other older fields. This should result in a lessened water production. Treating plant tankage was designed to handle 18,000 bbls. of water per day; pumping equipment will deliver approximately 8,500 bbls. of water to the disposal well through suitable tubing under 225 pounds pressure; the present gathering system was designed to deliver 8,500 bbls. of water per day by gravity flow to the treating plant, which is several times the present daily salt water production. Looking forward to the time when salt water production may exceed 8,500 bbls. per day in the field provisions included in both the gathering system and treating plant make it possible for input pressure and delivery capacity of the entire plant to be increased to meet the requirements, for a maximum capacity of approximately 18,000 bbls. of water per day.

Treating plant with oil trap and storage basin in the foreground, treating tank, clear well tank, and chemical buildings which house pumps and filters



Character of Brine

In the Fitts field salt waters produced from the different oil-producing formations vary considerably. Analysis of average brine produced by wells in the field shows it to have the following characteristics:

PHYSICAL CHARACTERISTICS

Turbidity	140 p.p.m.
Color	Yellow
Specific gravity	1.15

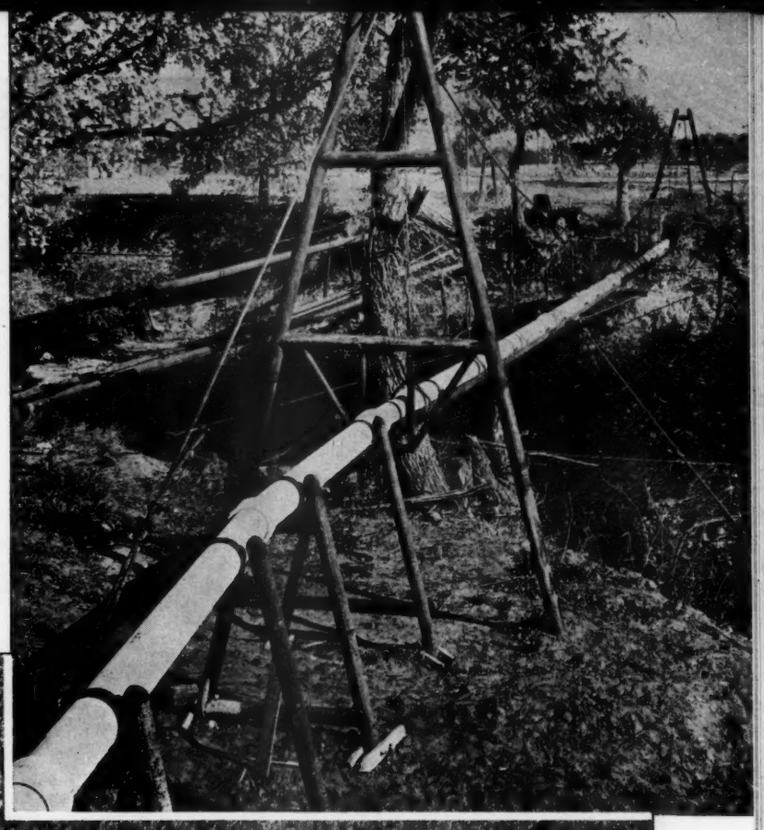
CHEMICAL CHARACTERISTICS

Alkalinity (methyl orange)	80 p.p.m.
Free carbon dioxide	103 p.p.m.
pH	6.5
Calcium carbonate	80 p.p.m.
Calcium chloride	12,400 p.p.m.
Magnesium chloride	6,480 p.p.m.
Sodium chloride	88,500 p.p.m.
Iron oxide	80 p.p.m.
Silica	12 p.p.m.

Some waters produced in the Fitts field have a lower pH value than indicated in the above analysis and a larger quantity of dissolved solids, resulting in greater turbidity from precipitated suspended solids. It is obvious, from an inspection of the above analysis, that such brine is unfit for immediate disposal as it is produced in the field. The large amount of turbidity, suspended matter and iron present would cause rapid clogging of the disposal formation; low alkalinity and high carbon dioxide content would result in rapid corrosion of brine handling equipment and disposal lines. If these lines were constructed of iron or steel consequent corrosion products would also clog the disposal formation.

Observations made while testing the various waters, to ascertain proper treatment before disposal, showed that salt water produced at the well was clear and contained no apparent suspended materials. On exposure to atmospheric temperatures and pressures, in either closed or open type containers, the waters soon became very turbid as a result of the precipitation of hydrated iron oxide and calcium carbonates. A continual precipitation of hydrated iron oxide and calcium carbonate appeared to extend over a long period of time, and, in some cases, after 15 or more days of exposure waters were still turbid and apparently unsuitable for satisfactory disposal in underground formations. Calcium carbonate precipitated from the salt water, is retained in solution before precipitation as calcium bicarbonate. The hydrated iron oxide is retained in solution also as iron bicarbonate. And at the time the waters were first brought to atmospheric conditions the

Represents Technique



(Upper) One of the nine suspension-type creek crossings. (Lower) Exposed section of asbestos pipe line supported on welded "A" frames.

calcium and iron bicarbonates and carbon dioxide gas appeared to be in a state of solution equilibrium. Salt waters, exposed to atmospheric conditions, liberate some of the dissolved carbon dioxide gas, thus disturbing the solution equilibrium of the calcium and iron bicarbonates and the carbon dioxide gas. This results in the liberation of carbon dioxide gas from the dissolved calcium and iron bicarbonates as well as in the precipitation of the hydrated iron oxide and calcium carbonate. Observations and tests of brines made while precipitation of hydrated iron oxide and calcium carbonate progressed over a test period of several days, showed that the rate of settling of suspended materials from the waters varied in proportion to the pH value of the waters. As the samples were exposed to atmospheric conditions the pH value gradually increased until it reached 7.5 to 8; the carbon dioxide content lowered; while the bicarbonate saturation was reduced and the rate of settling of suspended materials (hydrated iron oxide and calcium carbonate) increased. Consequently it was apparent that the process of treating these salt waters for clarification and stabilization before disposal should include processes that would rapidly liberate carbon dioxide gas, increase the pH value of the water, cause coagulation of suspended materials in the shortest period of time with equipment of the smallest size and amount.

Gathering System

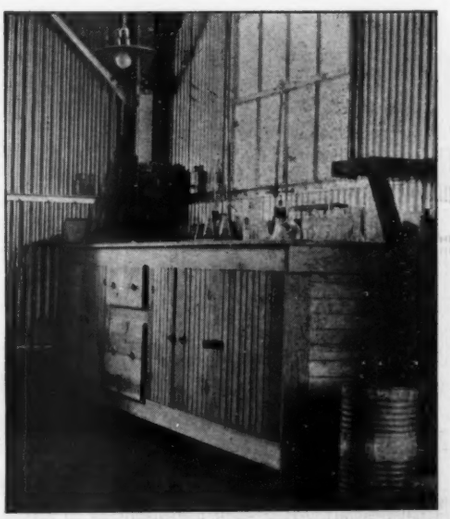
In describing the project it is fitting that attention be directed first to the gathering system, in which approximately 50,000 feet of pipe known as Class 150 Transite pipe has been used to bring the brine by gravity flow to the treating plant from all leases in the field; approximately 1,000 feet of steel duroline pipe is used as a pressure line between the treating plant and the disposal well. All lines have been laid to grade in the gathering system, consequently there are practically no low places or reverse siphons throughout the system. The various sizes and approximate amounts of Class 150 Transite pipe used in the gathering system are as follows:

	Feet
3-inch	5,300
4-inch	15,000
6-inch	7,000
8-inch	22,700

Line Pressure

On completion, each section or unit of the gathering lines was tested under a 150-pound working pressure and no leaks were found, showing that the entire 50,000 feet of line is ready for operating pressures higher than encountered under gravity flow. It is anticipated that it may be necessary to pump scrapers through the lines for cleaning the system. Increased operating pressures may be desirable to get increased capacity through the lines in the future by pumping under pressure.

Brine coming to the gathering system from leases flows from gun barrel or treater to a small concrete sump. The concrete sumps at the treating tanks serve the dual purpose of receiving the salt water into the gathering system and trapping oil. Other concrete sumps of various sizes are placed on the main gathering line throughout the field. These sumps are a means for connecting lateral lines from the various leases into the main gathering line and they also serve as oil traps. In case it should be desired to convert any part of the gathering system from gravity flow to pressure operation the interior connections within the sumps are such that the lines can be connected and cleaned by scrapers while operating under pressure. At each sump, connection is made to the various gathering lines by means of a special Transite adapter set in the wall of the sump. A "T" connection on the outlet in the sump provides for withdrawing brine from the sump at a point near the bottom of the sump, well below the oil level. This "T" connection can be removed and pressure connections can be attached to the Transite adapter when a scraper is to be pumped through the line. All sumps have wooden



Laboratory corner of treating plant

covers but these will probably be replaced by steel covers. To hold the gathering lines to grade throughout the field, all exposed Transite pipe is supported by "A" frames made by welding junk pipe. The "A" frames (two per joint of pipe) are set in concrete. Pipe is held to the frames on creosoted pine blocks by clamps made of discarded threaded end pieces of old steel pipe stamped out to serve this purpose. These clamps are bolted to the top cross member of the "A" frame.

Altogether there are nine creek crossings, not counting gulley crossings. The longest crossing is 197 feet. Frames for supports have been made from old drill pipe. Suspension and side guy lines are old cable tool wire lines. Horizontal support for the pipe line across the creeks is afforded by a trough made of split bull wheel shafts from old drilling equipment. Transite pipe is held in the trough by means of two clamps and saddles, per joint of pipe, in the same way it is held on the exposed pipe supports. The only new material at creek crossings was that in wire line clamps and turnbuckles. Unique in creek crossing construction is the side bracing of the suspended trough to protect against excessive horizontal side swing in case the crossing should be submerged in periods of high water. Connection between pipe in the trough and pipe just off the crossing in the creek bank is provided by a universal type joint that will allow both horizontal and vertical swing of the suspended trough and pipe line, preventing parting or breaking of the line.

Brine Treating Plant

The gathering system delivers brine to a concrete sump near the plant, from which it goes to the last oil trap on the receiving end of the plant's concrete storage basin. After the oil is separated in the large oil trap at the plant, brine is delivered to a receiving or storage basin approximately 30 feet wide, 40 feet long and 10 feet in depth. From this receiving basin it is pumped to an Accelator brine treating plant, manufactured by the International Filter Co., for clarification and stabilization. This plant consists essentially of the necessary dry chemical feeders and proportioning equipment, forced draft aerator, Accelator brine stabilizer and pressure filters.

Chemical Proportioning

Proportioning of the chemicals (lime and alum) in accordance with variations in brine flow is accomplished automatically by means of a venturi tube and a differential pressure-actuated, electrically operated proportioner in conjunction with Infilco variable rate dry chemical feeders.

Aeration

The forced draft aerator consists of a tight rectangular wooden housing, approximately 8 feet high, in which is installed a perforated wooden distributor tray and a series of staggered slat trays over which brine cascades.

Stabilization

The Accelator stabilizer is essentially a reaction tank in which Accelator equipment is installed. The Accelator equipment consists of a circulator driven by a vertical shaft by means of a motorized reducer mounted on supports at the top of the treating tank and an inner or rising tube which provides (*a*) a reaction zone, (*b*) a primary mixing zone, and (*c*) a secondary mixing zone; an outer draft tube which provides a final reaction zone; a slurry concentrator; sludge removal piping for draining the apparatus; and necessary appurtenances.

Filtration

The filtering equipment consists of two 10-foot diameter pressure sand filters. The filtering medium within the filters is graded from 1-inch gravel to fine silica sand.

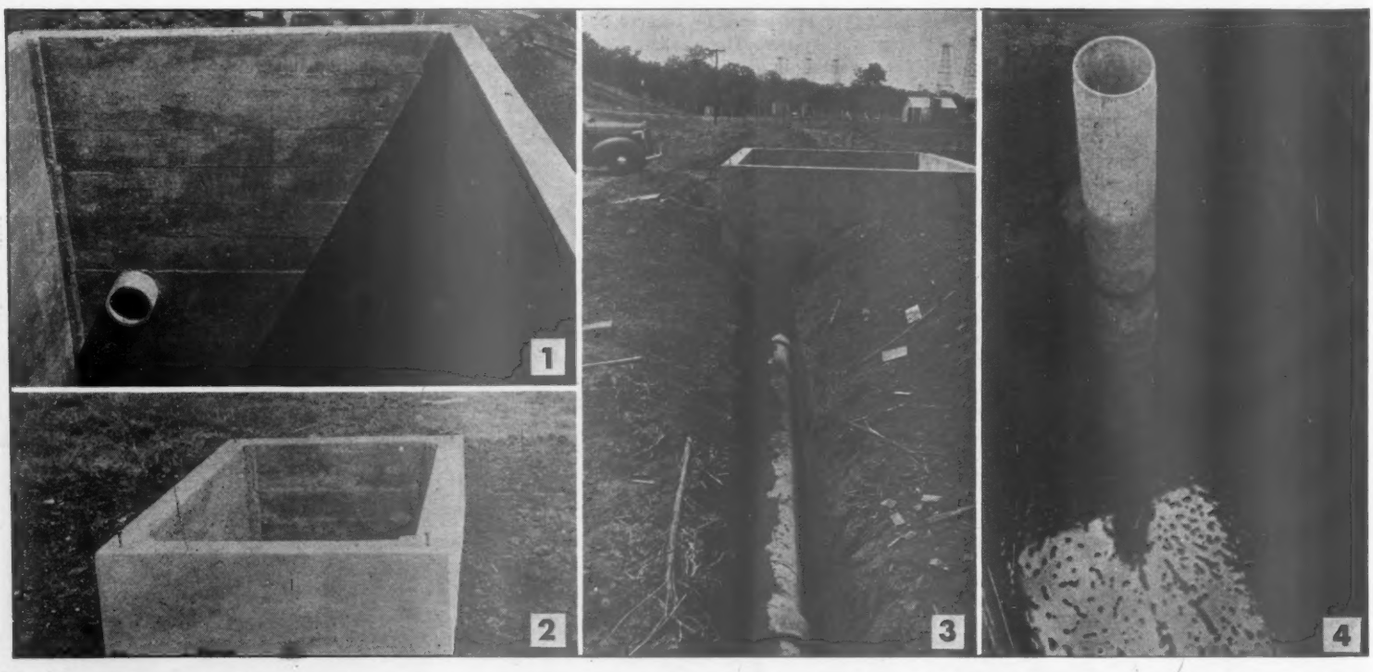
Pumping Equipment

Pumping equipment included in the treating plant consists of two centrifugal pumps. One of the pumps is a 600-gallon per minute low-pressure centrifugal pump which is used for pumping brine from the storage reservoir to the top of the aerator on the treating tank. It may also be used to back-wash filters, and for pumping sludge slurry accumulated in the plant to an earthen disposal pit. The other pump is a 300-gallon per minute high-pressure (225-pound) centrifugal pump which pumps the treated brine from the treating plant to the disposal well.

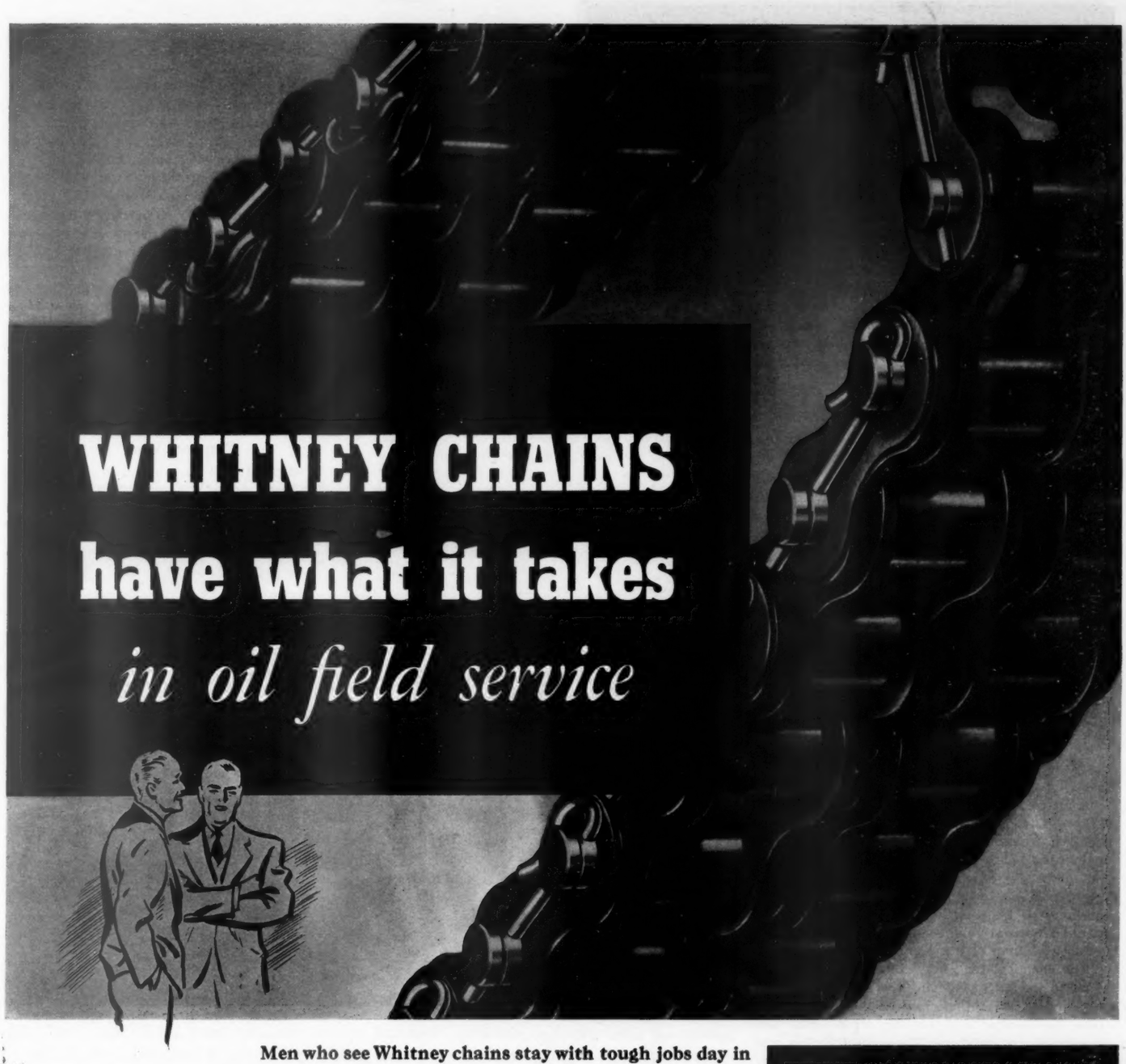
The 600-gallon per minute low-pressure pump is connected to an electrical float switch (along with chemical feeders, aerator blower and Accelator motors). This floating switch is located in the receiving reservoir. The 300-gallon per minute high-pressure pump is controlled by an electrical float switch located in the 200-bbl. clear well. Under the present pumping equipment setup, with suitable tubing in the disposal well, approximately 8,500 bbls. of water can be pumped to the disposal well under a 225-pound pressure. Provisions are included whereby another 300-gallon high-pressure pump can be set and operated in parallel with the present high-pressure pump, which would deliver approximately 17,000 bbls. of water to the well per day under 225 pounds pressure. In case the quantity of water to be disposed of does not exceed 8,500 bbls. per day but should require a higher input pressure than 225 pounds, provisions are included whereby another 300-gallon high-pressure pump suitable for 500-pound pressure can be set and operated in series with the present 225-pound pressure pump. Looking forward to the time when the quantity of water might exceed 8,500 bbls. per day and require an input pressure greater than 225 pounds, provisions have been made in the plant for installing a large 600-gallon per minute high-pressure pump to operate under 500-pound pressure. This can be operated in series with two 300-gallon per minute 225-pound pressure pumps now operating in parallel. These provisions, included in the plant for making additions as brine production increases, make possible a flexible plant which should be adequate for meeting any requirements encountered in the Fitts pool.

Treating Procedure

The treating plant is entirely automatic in operation except for the recharging of the chemical feeders and the occasional back-washing of



(1) Main line sump with adapters for main line and lateral connections. (2) Type of sump for receiving brine at producing properties in the field. (3) Pipe-line connections at sumps. (4) "T" connection on adapter reaches to lower part of sump where brine intake is well below the oil level.



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filters. When the reservoir is filled and emptied the low-pressure centrifugal pump, chemical feeders, aerator blower and Accelator motors are started and stopped, by means of an electrical float switch in the storage reservoir. The brine from the reservoir, after passing through the venturi tube of the chemical proportioner, is delivered to the forced draft aerator mounted on the Accelator stabilizer reaction tank. While passing through the aerator, the air being forced upward through the aerator countercurrent to water flow removes any carbon dioxide gas liberated as a result of repeatedly breaking the brine stream into many small streams. The contact of the air with the brine oxidizes the iron which is present. The aerated brine is received in the collector pan,

Chemical feeders in building, on top of treating tank, controlled by proportioner

the outlet of which delivers brine to the primary reaction zone of the Accelator stabilizer.

By means of the Accelator equipment, a slurry —precipitated from the brine as the result of chemical treatment with lime and alum—is created in the lower portion of the treating tank as well as in the reaction and mixing zones. This slurry is maintained by forced circulation which continues as long as the treating plant is being operated. Several volumes of slurry are circulated for each volume of brine entering the Accelator.

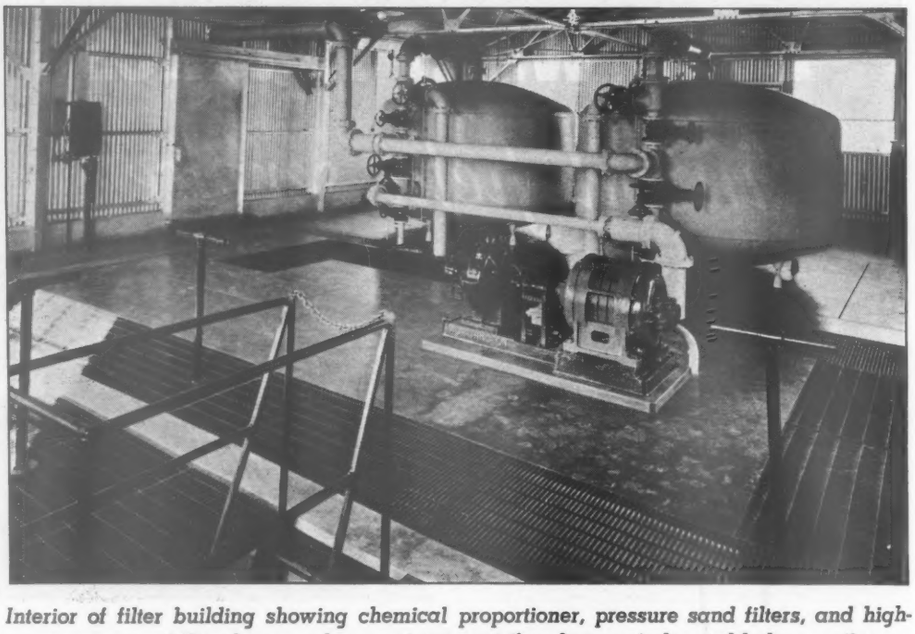
The chemical reagents — lime and alum — are added to the slurry entering the primary reaction and mixing zone; then raw brine is introduced from the aerator and rapidly mixed into this chemical-slurry mixture. Throughput brine and slurry are forced upward through the secondary mixing zone in the central draft tube; then they pass down and out into the slurry pool.

Separation of the clarified, stabilized brine takes place continuously over the entire area of the slurry pool. The rate of escape is equal to the rate of supply of brine being treated. The nature of the slurry formed in the Accelator is such that it does not tend to rise with the throughput brine. If circulation is not maintained, sludge will settle rapidly to the bottom of the tank. Because of the forced circulation and the constant dilution with brine being treated, the slurry will assume a depth of 3 or 4 feet. As the amount of solids increases, due to addition of those formed by the treating process, a portion of the slurry is continuously withdrawn from the slurry pool, thickened in the slurry concentrator and continuously discharged.

Clarified stabilized brine—ordinarily containing 5 to 10 parts per million of turbidity—emerges from the slurry in a manner comparable to that in which clear water rises through the bottom of a spring, and is delivered to the filters by means of an overflow pipe connected to a tank at the height the fluid level is maintained while treating.

After the brine passes through the filters it is conveyed to a 200-bbl. clear well tank from which the crystal clear salt water can either flow by gravity or be pumped under pressure to the disposal well.

The sludge slurry accumulated in the Accelator treating tank is withdrawn from the tank by means of a continuous drawoff operated by an electrical solenoid valve. It is collected in a concrete sump located within the treating plant building. Back-wash water containing foreign material obtained by pumping clear stable salt water from the 200-bbl. clear well tank, by the 600-gallon per minute low-pressure pump, through the bottom of the filters and out at the top, is also collected in the concrete sump in which the sludge slurry from the Accelator tank is collected. After the settling of sludge and foreign material, the clear salt water above the sludge in the bottom of the concrete sump is returned to the Accelator treating tank. The sludge in the bottom of the concrete sump can be washed with fresh water and pumped by means of the 600-gallon per minute low-pressure pump to an earthen pit provided for retaining sludge accumulated in the plant. It is apparent that material taken from water (along with the fresh water it is washed with) will be neutral and will not pollute the soil because the sludge material (iron oxide and calcium carbonate) are similar to the chemical ingredients found in the soil in the surrounding vicinity.



Interior of filter building showing chemical proportioner, pressure sand filters, and high-pressure centrifugal pump; low-pressure centrifugal pump is located below grating

Treated Brine

By treatment of the brine in the manner described, dissolved gases present in the raw brine —usually free carbon dioxide and in some instances hydrogen sulfide — are largely removed with consequent increase in pH of the brine. Simultaneously, iron is partially or completely oxidized. The addition of hydrated lime to the aerated brine further increases pH and assures complete precipitation of iron. Alum used in the treating process effectively coagulates precipitated iron and other suspended matter. In consequence, the brine leaving the reaction tank of the Accelator stabilizer is in substantial calcium carbonate-pH equilibrium, free from iron and relatively free from other turbidity or suspended matter. Final clarification through the pressure filters removes the last traces of suspended matter so that the treated and filtered brine delivered to the receiving tank is chemically stable and of sparkling clearness, suitable for subsurface injection.

Being chemically stable, the treated brine will neither deposit nor corrode the piping which conducts it to the disposal well; and being in chemical equilibrium, reaction products cannot form, subsequent to treatment, with consequent clogging of the underground disposal formation.

Chemical economies are effected by the Accelator. There is no waste because the chemicals are recirculated until their full treating values are utilized.

Since the Accelator eliminates the necessity for sedimentation, the Accelator treating plant is but a fraction of the size of the conventional treating plant. Size of apparatus is not determined by holding time necessary for chemical and physical actions and sedimentation, but by the relation of surface area of the slurry pool to the volume of brine to be treated.

Disposal Well

The disposal well was drilled to a total depth of 6,743 feet; casing was set at 5,819 feet, which gives 924 feet of open hole in the Arbuckle lime. Upon completion, before the drill pipe was pulled, the well was acidized. After acidization the well was tested by pumping salt water into the well through the casing for five days. During the five days over 56,000 bbls. of water was pumped into the well under 15-pound pressure or less. Before running 5,825 feet of duroline tubing into the well in preparation to disposing of the salt water the well was acidized a second time. After running the tubing, the annular space between the casing and tubing was filled with oil to insure against corrosion of the outside of the tubing and the inside of the casing, salt water being displaced and forced back into the formation. Since the hole stood nearly full of salt water a 400-pound pressure at the casinghead was required to pump the oil into the annular space and displace salt water. At present, oil remains in the annular space between the tubing and casing with a 325-pound gauge pressure on the casinghead.

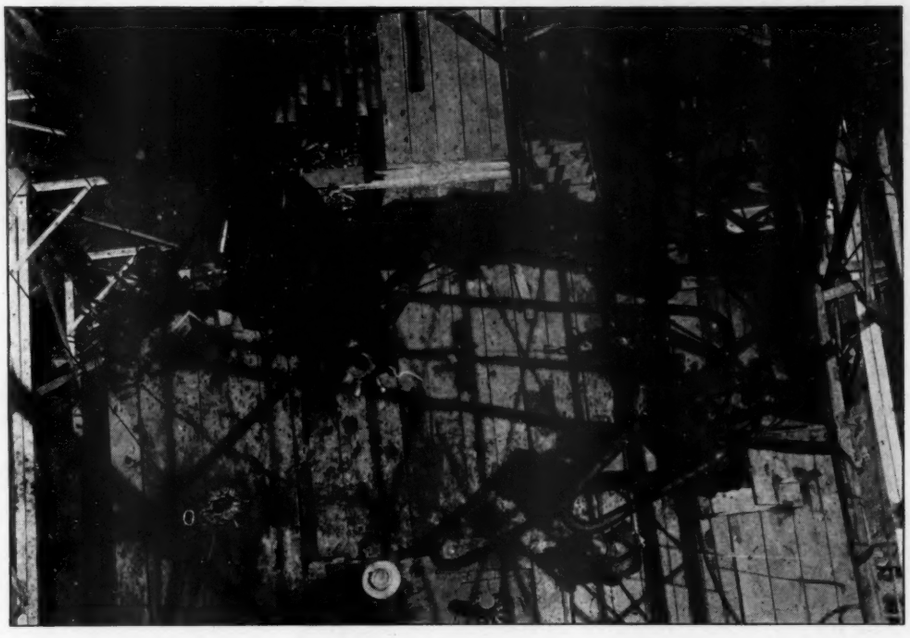
Because the natural salt water fluid level in the disposal well is near the surface, the hydrostatic pressure of the oil column in the annular space plus the casinghead gauge pressure is equivalent to the hydrostatic pressure of the column of salt water on the inside of the tubing. Under

these conditions it is evident that, since the well took approximately 14,500 bbls. of water in 24 hours under 15-pound pressure or less through the casing, the quantity of water to be disposed of will be determined by the size of the tubing and the pressure applied by the pressure pumps in the treating plant. The size of tubing installed in the disposal well is such that the quantity of water that can be pumped through the tubing is less than the rated capacity of the high-pressure 225-pound centrifugal pump. The plan is to operate the disposal well with the smaller tubing until a time when the quantity of water treated will exceed the capacity of the tubing under 225-pound pressure and/or until sufficient information pertaining to the type and corrosive properties of the salt water is determined by actual disposal operations. In case the tubing should be corroded in the distant future, a large string can be run into the disposal well.

Summary

In summarizing the Magnolia Petroleum Co.'s salt water disposal project it is apparent that there are several unique features that should prove both practical and satisfactory in clarifying and stabilizing salt water for disposal in underground formations. Some of the more important features observed are: (1) Ample provisions for separating oil from brine before it reaches the treating plant; (2) provisions for cleaning lines by pumping scrapers through the lines while operating under pressure or by gravity flow; (3) gathering lines have provisions whereby the delivery capacity can be increased conveniently; (4) the pipe in the gathering lines is all of such material that it will not be corroded by either the salt water or the soil within which it is laid; (5) creek crossings are provided in such a manner that the line can be maintained at a definite grade without low points or reverse siphons; there is ample protection against breaking or parting of the Transite line; (6) gathering lines are laid out in such a way that additional connections can be made conveniently at any time; (7) reservoir storage space is much smaller than ordinarily used in other salt water disposal plants; (8) the treating plant is flexible enough to take care of different volumes of water under various increasing input pressures with a minimum amount and quantity of equipment; (9) the disposal well apparently will take large quantities of water under relatively low pressures and should, with the type of water being pumped into it, continue to take large quantities of water per day for a long period of time; (10) the design of the project, type of materials, and equipment used are such that a high percentage of the equipment may be salvaged at a time in the future when production of salt water will have been discontinued in the Fitts field.

SAFETY — While Elevating Drill Pipe



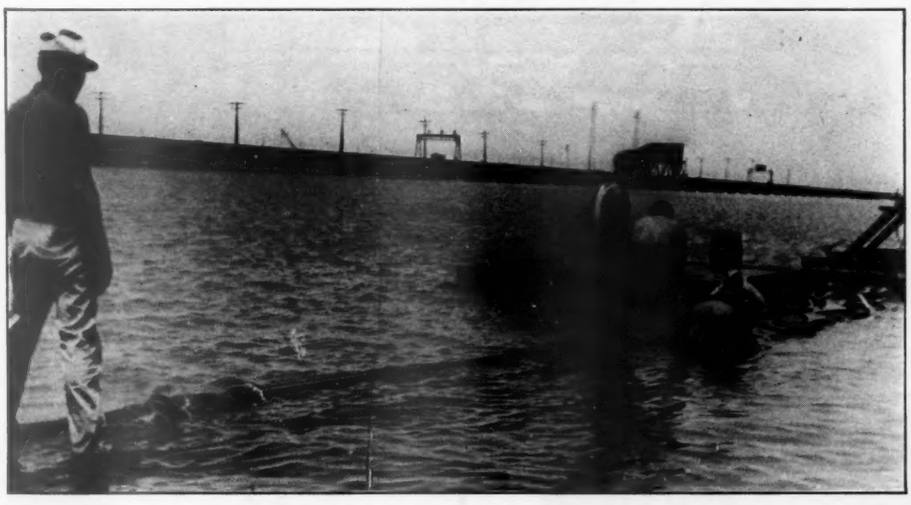
Rotary drilling machines are handled much faster than in former days and it is essential that the men know what is going to happen next and be in the proper position if accidents are to be avoided. This drilling crew was photographed from above while a joint of drill pipe was being pulled into the derrick preparatory to adding it to that already in the hole. The position and attitude of the men show the correct position while performing this particular operation.

Only two men appear in the photograph but a third is hidden by the hook and elevators. The effect of his work can be seen by the tightness of the 1-inch rope about midway of the joint of drill pipe. As the bottom of the joint clears the floor he will prevent it from swinging rapidly into the center of the derrick.

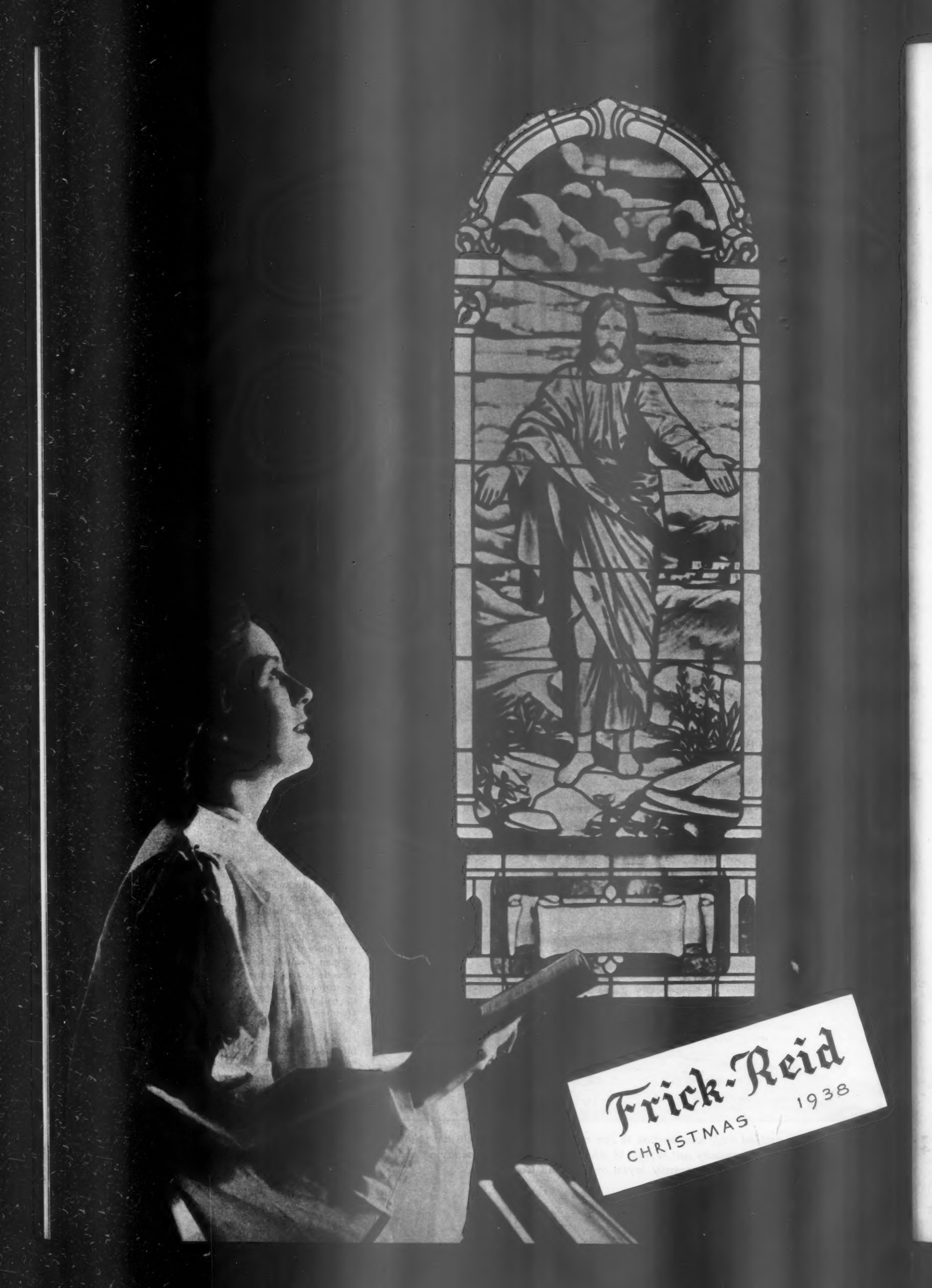
The pipe racker, left, is facing the V door and has his right foot slightly forward. As the pipe swings in, he will advance his right foot further and catch the bottom of the pipe with his right arm and shoulder, then, pivoting to the right, he will place the tool joint pin in the box. The back-up man is coiling the spinning line but at the same time he is also facing the V door to see just how operations are progressing. He will next place the coiled spinning line around the drill stem while standing to the right of it.

This crew believes in keeping the derrick floor clean and the men are taking no chances of stumbling over some object while doing their work. The rotary is almost completely covered, with a steel table occupying the space between the rotary table and the chain guard, and a board platform has been built over the back-up man's side. The hole in the steel plate is for a hurry-up post when working on a derrick that has no substructure.

The tongs are held out of the way while the men are performing this operation by hooks provided for that purpose.



Bolting up newly arrived eight-joint section to line already constructed. In the immediate background is tool and accessory raft to right of which is seen a portion of laying pontoon. Line was recently layed on the Gulf Coast


Frick-Reid
CHRISTMAS 1938

Progress in METALS

By W. L. NELSON

Alloy Steel Pump

The exceedingly difficult service conditions encountered by the Halliburton Oil Well Cementing Co. in handling abrasive laden cement slurry and drilling muds at pressures of 6,000 pounds per square inch, has caused this company to develop its own special pump.

Although the mechanical design of the pump presents some unique features, the feature of particular interest to metallurgists is the extensive use of molybdenum alloy steels. The steels used for various parts of the pump are as follows:

Service—	Composition similar to S.A.E.	Approximate properties: Yield point p.p.s.i.	Approximate properties: Brinell No.	Heat treatment
Base sections, fluid end, worm housing and main bearing coverings	4340	75,000	200	Yes
Cast steel, crankshaft, correcting rods and cylinder heads	4340	110,000	250	Oil quenched 1,550° F. Drawn 1,110° F.
Cross head guides (cast)	4640	70,000	...	Normalized 1,700° F. Drawn 1,200° F.
Cross head pin (carburized)	4615	.....	62 Rockwell	.....
Connecting studs for cylinder heads and valve pot covers	4140	105,000	299	A.S.T.M. Specification A-96-33, Class C bolts

Metals for Combating Hydrochloric Acid Corrosion

Hydrochloric acid and chloride solutions have long been classified among the most active corrosive agents. Such corrosive agents have not until recently been a problem in petroleum refining although for many years the corrosion caused by the liberation of small amounts of hydrochloric acid gas from the brines that are associated with petroleum has been referred to as "acid" corrosion. However, this corrosion is relatively mild and can be mitigated to a large degree by the use of ammonia as a neutralizing agent or can be halted to a large extent by the use of copper base alloys such as admiralty metal or red brass.

More recently, chlorinated materials have been widely used and investigated for solvent extraction and solvent dewaxing processes and the copper chloride process for treating distillate materials have been developed and hence the industry has been brought face to face with one of the most difficult corrosion conditions. Such materials as glass, porcelain ware, earthenware and some plastic materials are immune to attack but such materials are not good for construction purposes and hence metallic materials have been developed for this purpose.

The standard materials for withstanding cold dilute acid and brines has for many years been nickel and the copper-base alloys, examples of which are given in Table 1. With the exception of monel metal and the cupro-nickels, the materials are not really good resistors but from the standpoint of cost as compared with other common materials they are probably the best for the money.

Only a few metallic materials have been found for withstanding hot or concentrated acid and brines and they are all somewhat expensive. Although the materials composing Durichlor are not particularly expensive, the somewhat poor physical and fabrication properties of the material contribute to its cost. Durichlor is similar to duriron except that it contains about 3.5 per cent molybdenum and 1 per cent of nickel as well as the regular 14 per cent of silicon. The material has better physical properties than most of the silicon irons but it cannot be machined. Thus casting and grinding are the common ways of shaping. When the material is first immersed in acid, it reacts fairly rapidly but in a short time a grayish protective film which may be molybdenum chloride is produced and further corrosion is almost completely halted.

Four similar alloys, Hastelloys, A, B, C and D, are also recommended for hydrochloric acid. Hastelloy D cannot be machined or worked by regular methods and is not recommended for concentrated acid, whereas the A, B and C alloys are excellent engineering materials and are resistant to the acid. The compositions of these and other alloys for resisting hydrochloric acid are given in Table 2. Hastelloy B is similar to the A alloy except that it contains more molybdenum.

Metallic tantalum is almost immune to the attack of dilute or concentrated hydrochloric acid at room temperature and is only slightly attacked at elevated temperature. Pure nickel is resistant to weak solutions and monel metal is somewhat better. These two materials are classed among the resistors for hydrochloric acid corrosion mainly because they are relatively cheap and can be fabricated easily—not because they are highly resistant.

Data on the corrosion resistant properties of the alloys can be only comparative but some general figures are given in Table 3 for 100 hours of exposure to nonaerated solutions of hydrochloric acid. If the solutions are aerated, the general effect is to cause much more active corrosion, even more than eight times as fast a rate in some cases.

TABLE 1—ALLOYS FOR DILUTE HYDROCHLORIC ACID AND BRINES

	Per cent Cu	Per cent Zn	Per cent Ni	Per cent Sn	Per cent Others	10 Per cent HCL	Sea water	Hard Water
Nickel	....	....	....	....	99.9	Fair	Excellent	Excellent
Copper	99.9+	....	....	....	....	Fair	Fair	Excellent
Red brass	85.0	15.0	....	....	....	Fair	Fair	Good
Admiralty metal	70.0	29.0	....	1.0	....	Fair	Good	Good
Muntz metal	60.0	40.0	....	....	....	Fair	Fair	Fair
Aluminum bronze	80.0	16.0	1.0	1.0	*2	Fair	Good	Good
Cupro nickel	70.0	....	30.0	....	....	Fair	Excellent	Excellent
Monel metal	65.0	....	25.0	....	†5	Fair	Excellent	Excellent

*Aluminum. †Others.

TABLE 2—ALLOYS FOR RESISTING CONCENTRATED HYDROCHLORIC ACID

	% Mo	% Si	% Ni	% Fe	% Others
Durichlor	3.5	14.5	1.0	81.0	
Hastelloy A	20.0	....	58.0	20.0	2 (Mn)
Hastelloy C	17.0	....	58.0	6.0	14 (Cr) 5 (W)
Nickel	....	....	99.9	....	....
Monel metal	....	....	65.0	3.0	25(Ni)
Tantalum	....	....	....	....	99.95 (Ta)

TABLE 3—RESISTANCE TO HYDROCHLORIC ACID AT 25° C.

	Grams loss per square decimeter per 100 hours: 5% acid	20% acid	40% acid
Nickel	0.3	0.58	....
Monel	0.12	0.54	....
Hastelloy	0.1	0.08	0.01
Durichlor	(†)	(†)	0.11*
Tantalum	Almost negligible		

*No more attack occurs with time—0.11 attained in 30-40 hours. †About the same resistance to all solutions but at low concentrations a longer time is required to produce the protective film. At higher temperatures, shorter times are required to produce protective film.

Oil Methods Applied to Steel Laboratory

The use of pilot or small-scale plants has long been a successful method of studying petroleum refining but

Courtesy Jones & Laughlin Steel Corp.

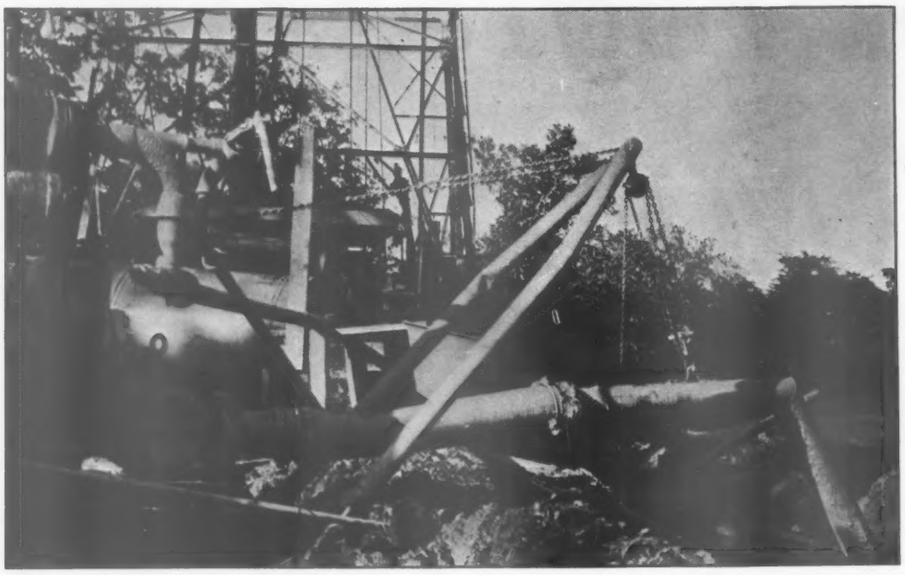
Tapping the small open hearth furnace which has a capacity of 1,500 pounds and parallels conditions in the big steel furnaces

such plants have not been used to any extent in the steel industry. Now, the Jones & Laughlin Steel Corp. has completed a miniature steel plant as a part of its research and development program.

The pilot steel plant consists of a cupola for melting iron, a 1,500-pound open-hearth furnace, a 375-pound electric arc furnace, a 30-pound electric induction furnace, a large and a small set of rolling mills, heat treating furnace, a 500-pound steam hammer, and many smaller auxiliary equipment as well as the facilities of the regular chemical, metallographic, and physical testing laboratories of the company.

The work at the pilot plant is being directed toward improving and controlling the physical properties of carbon steels—and at present the development of nonageing steels and the obtainment of better machineability. The plant is the result of 10 years of progressive planning and it is hoped that the new plant will form an important link in studying the complete sequence of steel manufacturing operations.

OPERATING IDEAS

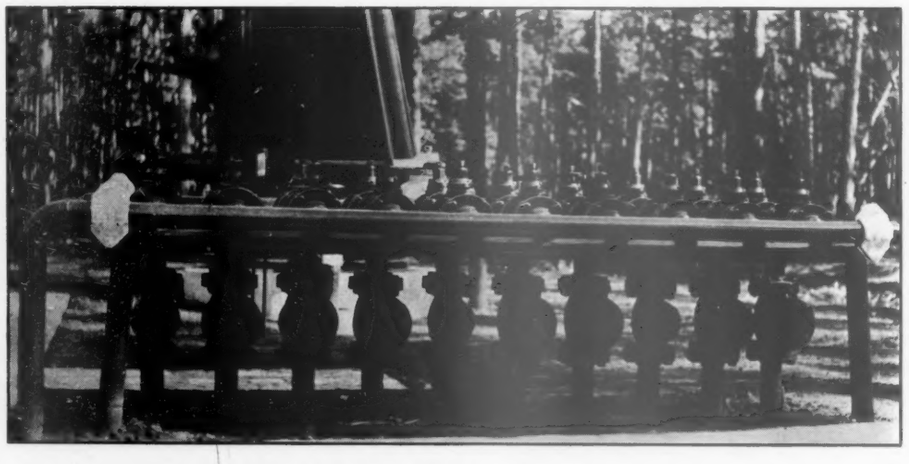


Wishbone Frame for Suction Line Hoist

A drilling contractor in the St. Elmo field has a very novel arrangement for raising and lowering suction mud lines to the pump. A pipe wishbone bolted to the pump skids, held in position by a chain anchored to the pump, holds small hoist for adjusting height of mud line.

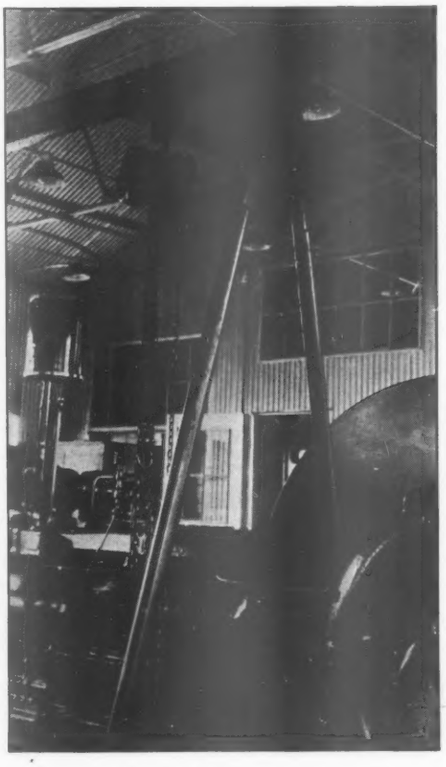
Elevated Platform Over Well

An elevated platform has been fabricated by welding 1-inch and 2-inch pipe; this is used over wells in the Evangeline pool, Louisiana, where paraffin scrapers and bottom-hole bombs are run. The accompanying photograph shows the special nipple screwed into a connection on the well. On the side of this nipple can be seen a pressure gauge. At the top of the nipple is a pulley attached in such a way that the wire line can readily drop into the well. The nipple is anchored with a chain guy line. The wire line runs from the pulley to a light hoist mounted on a trailer. The platform is constructed so that it may be readily moved.



Rack Supports Manifold on Producing Lease

Providing a support for control valves in a separator manifold simplifies installation and maintains connections in perfect alignment even though a number of the checks or valves in the various flow lines are removed simultaneously for servicing. When supported on such a rack, expansion or vibration set up in any one flow line is absorbed by the line in question, without the stress being transmitted to the manifold, as would be the case were the tie-in rigid and the flow line relied upon to sustain its part of the load. All valve and check joints being flanged, it is possible to remove any fitting without disturbing adjacent ones, and without there being any need of using auxiliary blocking or shoring for support.



Movable Crane

A crane, which is capable of handling 2-ton loads, was designed by a pipe line operator for use in the pump room of an East Texas station. The A-frame legs are made of 2-inch pipe with welded construction. Rubber rollers make it possible to move the crane about without any danger of scarring the floors.

Stratigraphic vs. Structural Prospecting

By E. E. ROSAIRE
Subterrex

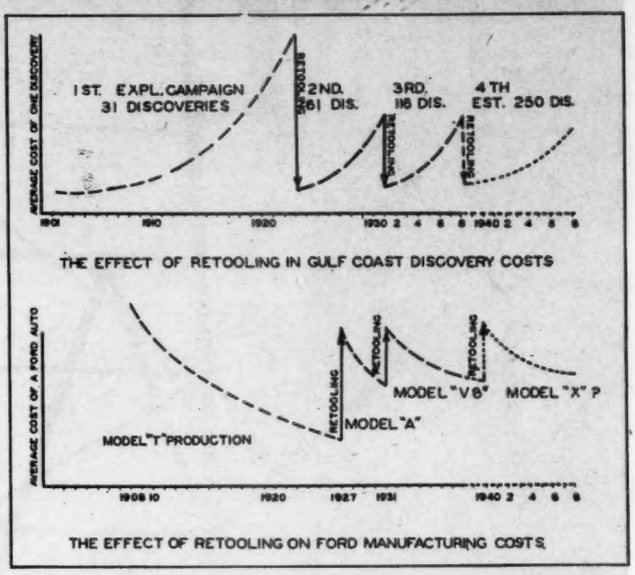


Fig. 3—Comparison of costs incident to retooling in oil exploration and automobile manufacturing

Before differentiating between these methods of exploration, I wish to point out certain general characteristics of all exploration methods, which can be appreciated properly only in perspective. Thus, each of the major exploration methods was considered the most effective of all, *while* it was operating effectively. However, each in turn has experienced an inevitable increase in discovery costs and rapidly diminishing returns, resulting in the enforced relegation of that method either to oblivion or to a secondary position. Such a sequence, of course, is to be expected, for, over a period measured in years, we find and exploit oil fields which represent the operation of natural forces over a period measured in millions of years.

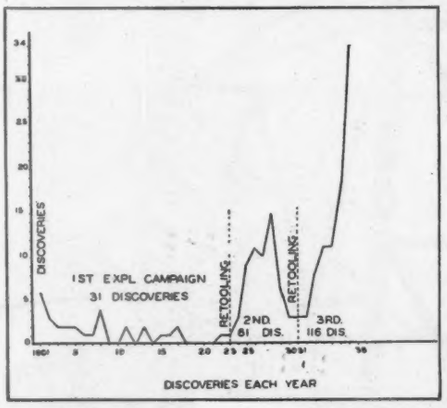


Fig. 1—Discoveries of three major exploration campaigns on the Gulf Coast

It is only recently that exploration has been recognized as a fifth major function in the petroleum industry. During the time that exploration has been coming of age, some of us have undergone the rather demoralizing experience of having reached relative perfection in an exploration technique, and then found no use for our experienced services. With a view to describing and making clearer such economical inconsistencies, I plan to review exploration in a well recognized geological province, to deduce certain general conclusions, and, treating of the future by means of the past, to indicate, first, the present need for a major change in exploration technique; second, the general requirements which such a change must embrace; third, what, in general, can be expected from such a change if so effected; and, finally, the way and the initial results of any solution of that problem.

If the oil discovered were proportional to effort, that is, to the money expended, then a justifiable conclusion would be that variations in exploration technique were largely fads and fancies, and are not justified. That is, if one oil field followed from one reflection crew year, and 10 more oil fields followed from 10 more reflection crew years, and so on, reward would be proportional to effort, and no material variation in exploration technique would be justified. A change in exploration technique, that is, an exploration retooling, is justified only to the extent that reward is not proportional to effort.

To examine the relationship between effort and reward, I wish to submit the following study of exploration in the Gulf Coast salt dome province, where prospecting has persisted over nearly 40 years, where oil fields are still being found, and where the most spectacular of all retoolings took place, the introduction of geophysical methods of exploration.

Exploration Retooling

Figure 1 shows the year by year discoveries of salt domes and oil fields in that geological province. The discoveries fall chronologically into three general periods, from 1901 to 1924, from 1924 to 1932, and from 1932 to date. These three groups of discoveries are associated with three major exploration campaigns, each of which was based upon the use of one or more distinct exploration techniques. I wish to describe each of

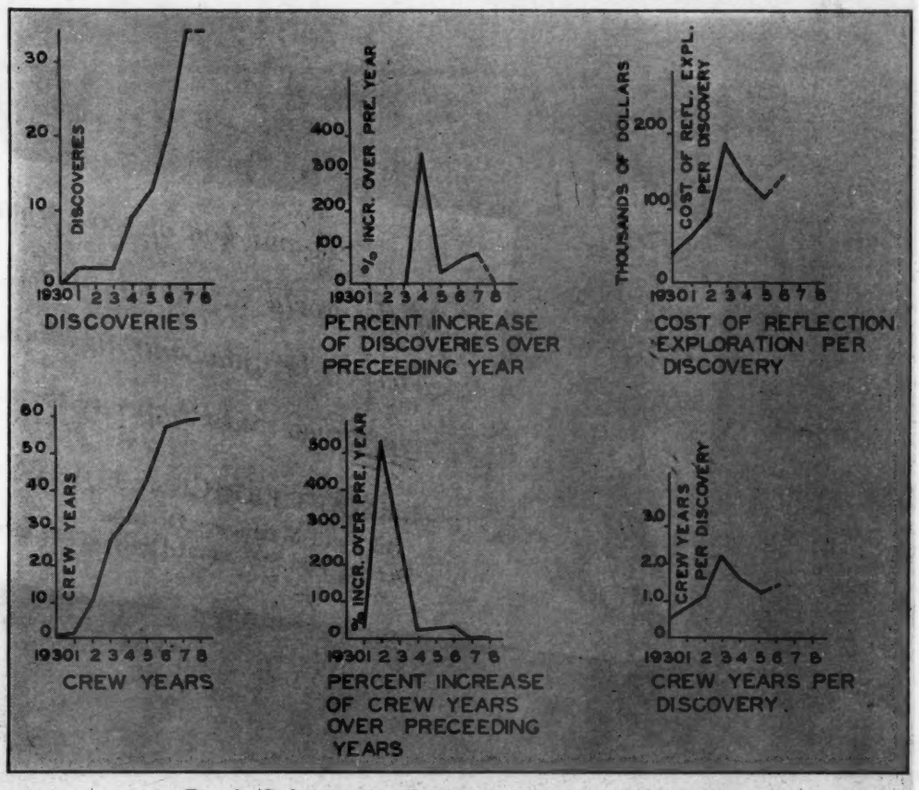
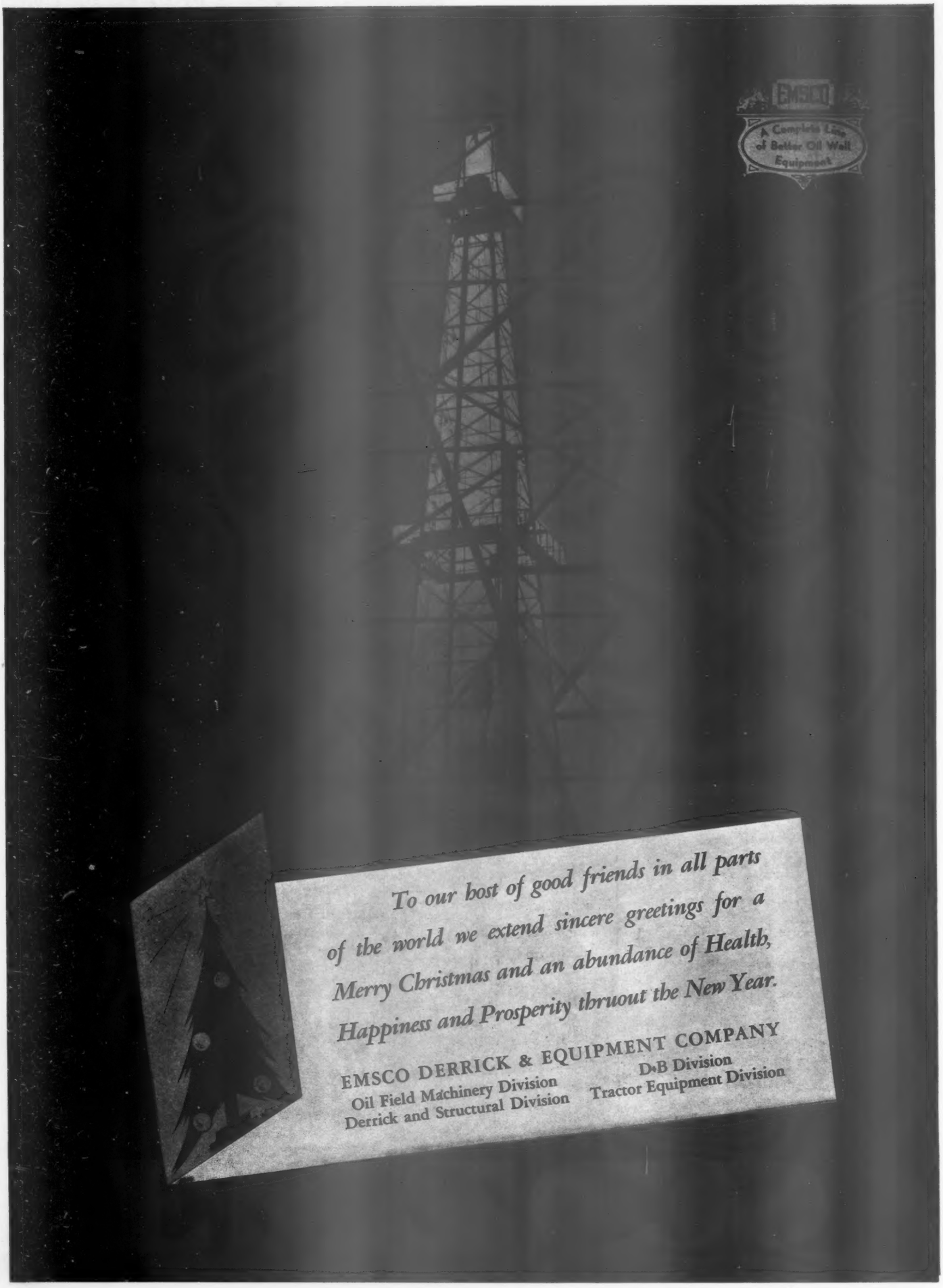

DISCOVERIES
% INCR. OVER PRE. YEAR
THOUSANDS OF DOLLARS
COST OF REFL. EXPL. PER DISCOVERY
DISCOVERIES
PERCENT INCREASE OF DISCOVERIES OVER PRECEEDING YEAR
COST OF REFLECTION EXPLORATION PER DISCOVERY
CREW YEARS
% INCR. OVER PRE. YEAR
CREW YEARS PER DISCOVERY
CREW YEARS
PERCENT INCREASE OF CREW YEARS OVER PRECEEDING YEARS
CREW YEARS PER DISCOVERY

Fig. 2—Relation of reflection crew years to discoveries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A Complete Line of Better Oil Well Equipment
To our host of good friends in all parts of the world we extend sincere greetings for a Merry Christmas and an abundance of Health, Happiness and Prosperity thruout the New Year.
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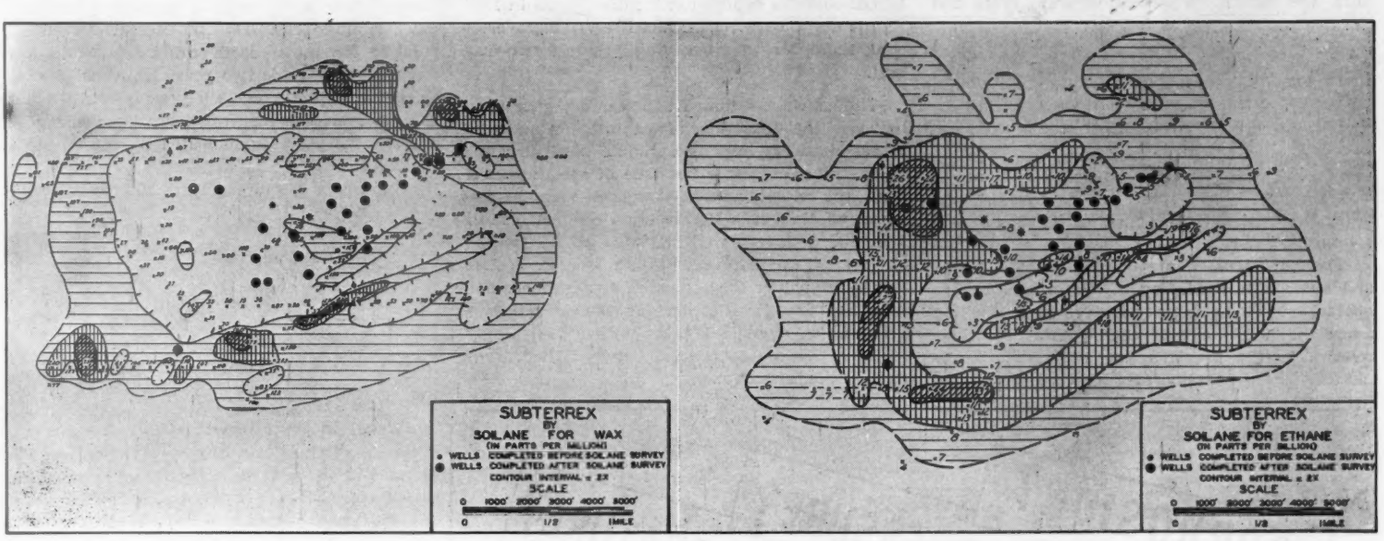
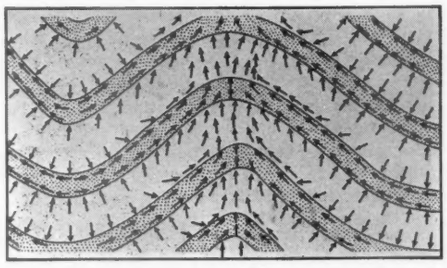


Maps showing soilane for wax and ethane together with wells drilled before and after making of soilane surveys

these three campaigns generally, and the last specifically.

The first campaign, 1901-1924, was characterized by an exploration technique which consisted of drilling wells upon surface anomalies such as topographic highs, topographic lows, gas seeps, and paraffin dirt beds.

An initial period of low discovery costs, initiated by the introduction of this technique, was marked by the discovery of Spindletop, Humble, Jennings, Vinton, Sour Lake, Goose Creek and other oil fields in (relatively) rapid succession. During this period of low discovery costs, while



Direction of motion of water in alternating coarser and finer sediments after folding

the technique was still new to the area, the original investments were made which resulted, later, in the Gulf Oil Co., the Humble Oil & Refining Co., and the Texas Co., as we know them today.

The later increasing discovery costs, attendant upon the continued application of that same technique, are best described by the following quotation, circa, 1924: "That it becomes increasingly difficult to find additional domes is apparent when we consider that of the 40 known domes in the Gulf Coast, 37 were found from 1901 to 1913. Of the other three, two were found in 1917 and one in 1922. Since the discovery in 1917 of the Section 28 dome . . . approximately 675 wildcat wells have been drilled in search of new domes on the coast, involving an expense estimated at $20,000,000, exclusive of the cost of leases and overhead expenses. Yet only one new dome has been found during this period (of seven years) and it has not yet proved profitable commercially as a source of oil."[1]

In view of these later prohibitive discovery costs, it is not surprising that no new rivals were born late in this first campaign to challenge the Gulf, Humble, and Texas companies today.

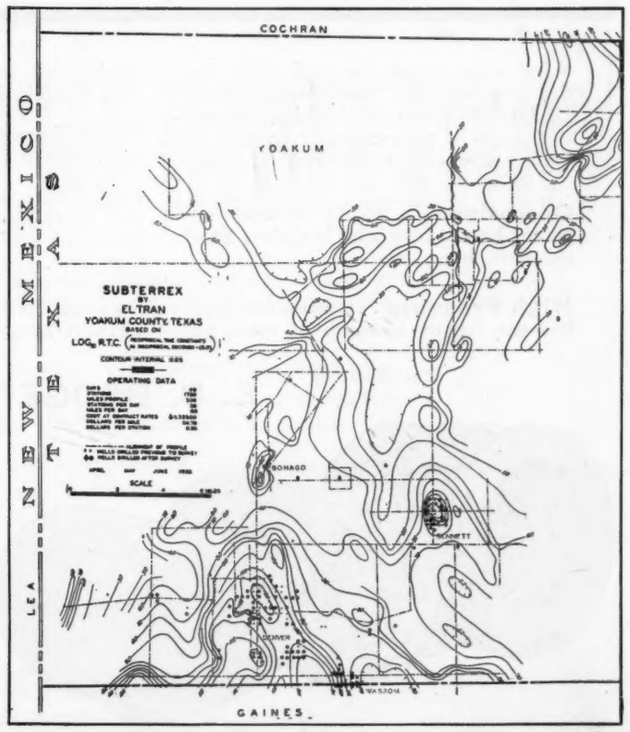
The second campaign, 1924-1931, was initiated by the retooling in exploration incident to the introduction of geophysical methods of exploration. Two techniques new to the area were introduced, the torsion balance, and the refraction seismograph. In every case, low-cost discoveries resulted while each technique was still relatively new to the area, to be followed by increasing discovery costs and a consequent abandonment of the technique as a decisive exploration method. Thus, two gravity exploration techniques were successfully introduced, the searches for, first, gravity maxima, and second, gravity minima; each made decisive contributions, the former at Nash, Allen, and Clemens; the latter at Sugarland and Thompsons; and each, in turn, was then relegated to a nondecisive role because of increasing discovery costs.

In the early refraction crew years, five salt domes were found for the Gulf, by the Seismos, G.m.b.H. (Orchard, Fanette, Starks, Hawkinsville, and Fausse Pointe), following which the discovery rates lagged and the discovery costs rose. Then an improvement in refraction technique, introduced by the Geophysical Research Corp., another but a minor retooling, made possible the trial of that method in a new area, the lakes and bays of South Louisiana. The resulting discovery rate, of 11 salt domes in one and one-half crew years, is higher than was recorded before or since, and led to a corresponding drop in discovery costs to less than $50,000 per salt dome, only four years after Henniger's figure of $20,000,000 per dome. The introduction of that method into East Texas led to the discovery of one deep (Van) and several shallow salt domes in about two years, another case of lowered discovery costs coinciding with initial use in an area new to the method.

In spite of these successful operations, the refraction discovery costs rose until the method was abandoned in 1930-1931, after the last two years of exploration resulted, primarily, in the discovery of only marginal anomalies and an unduly high percentage of dry holes.

The third campaign, 1932-1938, was characterized by the extensive use of the reflection seismograph, over the same area previously combed thoroughly in two earlier and quite successful exploration campaigns. Sufficient statistics are available to examine discovery costs for this period in detail.

The statistics on reflection crew operations were compiled from the Gulf Coast weekly scout reports, while those on discoveries have been taken from the Oil Weekly, Gulf Coast issue, July 25, 1938, with culling by the writer to eliminate those discoveries in the early part of this campaign wherein, to the writer's knowledge, the



Yoakum County, Texas, development showing wells drilled on eltran anomalies in Denver and Bennett areas

[1]W. F. Henniger, Geology of Salt Dome Oil Fields. De Golyer and others, Am. Assoc. Petrol. Geol., 1926, p. 776.

reflection technique did not play a material part.

Let us examine the data at hand. For each year, the number of reflection crew years and the discoveries were as follows:

A Year	B Crew years	C Discoveries
1930	1.0	0
1931	1.6	2
1932	10.1	2
1933	26.6	2
1934	32.6	9
1935	42.3	12
1936	56.9	20
1937	58.3	34
1938 (estimated)	59.6	34

From these data the curves of the left-hand column in Figure 2 are plotted.

These two curves are quite similar in shape and show a two-year lag of discoveries behind operations. This similarity is even more striking when the percentage of each year's operations relative to the previous year's performance is plotted. That is, the increase from 1.6 crew years in 1932 to 10.1 in 1933 represents a 531 per cent increase in operations, while the increase from two discoveries in 1934 to nine discoveries in 1935 represents 350 per cent increase in discoveries over those for the preceding year (a two-year lag).

The conclusion that a two-year lag intervenes between the initiation of exploration and the actual discovery may appear quite arbitrary, for it, like all averages, is not true of specific cases. Thus, the reflection work associated with the discovery of Manvel in 1931 was not completed until after the discovery well had spudded in. On the other hand, the discovery of oil at Darrow in 1932 was prompted by the reflection exploration made in 1929. The justification for the use of two years as an average lag is, however, strikingly indicated by the correlation between the curves in the middle column.

While the curves suggest that discovery is directly related to effort, it is possible to see how closely such is the case by measuring the difficulty of discovery. This index results from calculating the crew years, each year, required for one discovery made two years later. That is, the reflection exploration each year is credited with the discoveries made two years later, using the average two-year lag indicated by the curves in the figure.

This index of "difficulty of discovery" comes out as follows:

Year—	Crew years	Discoveries made two years later	Difficulty of discovery in crew years per discovery
1930	1.0	2	0.5
1931	1.6	2	0.8
1932	10.1	9	1.1
1933	26.6	12	2.2
1934	32.6	20	1.6
1935	42.3	34	1.2
1936	56.9	34	1.4
1937	58.3	..	..
1938	59.6	..	..

Plotted in the lower right-hand corner (Figure 2) the difficulty of discovery shows a sudden increase in the year 1933, rising from an average of 0.8 crew years per discovery for the period 1930-1932, and jumping to an average of 1.6 for the period 1933-1936, an increase of 100 per cent.

An explanation for this anomalously high index probably lies in the fact that, in the year 1933, the new crews added to operations in this area were 16.5, definitely higher than in the years 1932 and 1934, when 8.5 and 6.0 new crews, respectively, were added. In only one other year were any such number of new crews added, in 1936, when 14.6 new crews were added. To this highly technical, rapidly expanding, and understaffed industry, this later large increment was, undoubtedly, less of a strain than was the addition of 16.5 new crews in 1933, when the industry was three years younger but only half as old; for in 1930, three years earlier, there were not 16 reflection crews in existence. As a matter of interest, early in that same year, 1933, one particular operator, without experience in this technique and who had partially mapped the uplift at Hastings, failed to recognize the evidence for uplift, actually shown on the records, because of his inexperience in interpretation and his lack of confidence in a newly designed and built set of apparatus. Six months later, another operator, with more experience and confidence in that same technique, independently rediscovered the uplift for the Stanolind Oil & Gas Co.

Obviously, there is something to be said for experience, particularly when a technique is relatively new and is operating under highly competitive conditions.

Further, this large influx of new crews indicates the approximate time at which more and more reflection crews were used for reconnaissance rather than detail exploration. Such a modification in the use of this exploration method was bound to result in materially increased discovery costs, for the reflection seismograph is a structural prospecting device, and so is unsuited, economically, for reconnaissance, as will be explained later.

The Cost of Discovery

For each campaign it is generally bemoaned, but not generally recognized as something to be expected, that unit exploration costs increase with the passage of time. Thus, the reflection crews operating in 1932 used five geophones, hand-dug shot holes, and six to eight men, while those operating now use more geophones (as many as 64 and 96 have been reported from individual crews), machine-dug shot holes, and frequently more than 20 men. While the quality of the data has improved during that period, the operating cost per crew month has also increased, from about $6,500 in 1932 to about $9,000 in 1938. During that period, the actual coverage per month has diminished considerably, due to the fact that continuous

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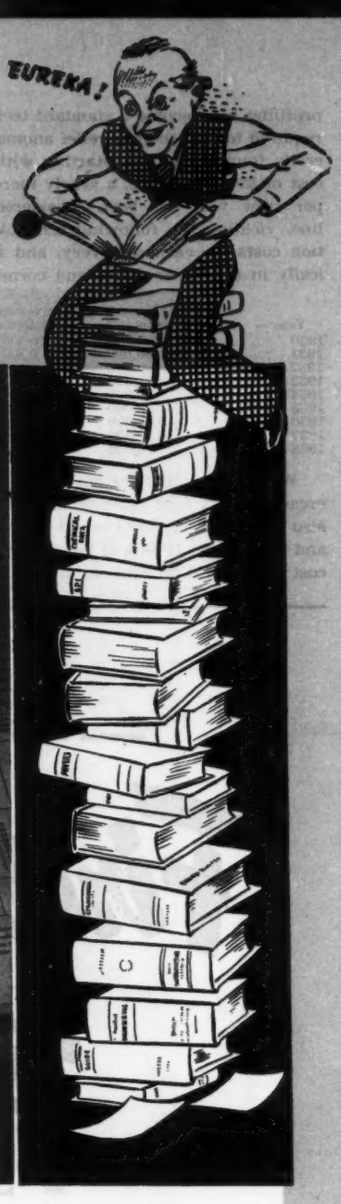

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profiling has become a standard technique and is required to find the low relief anomalies now generally found today. So, starting with a crew-year cost of $80,000 in 1932, a yearly increase of $5,000 per crew year has been considered not out of line, yielding the following schedule of exploration costs for each discovery, and shown graphically in the upper right-hand corner.

Year—	Cost per crew year	Crew years for discovery	Cost of discovery
1930	$80,000	0.5	$40,000
1931	80,000	0.8	64,000
1932	80,000	1.1	88,000
1933	85,000	2.2	187,000
1934	90,000	1.6	144,000
1935	95,000	1.2	114,000
1936	100,000	1.4	140,000
1937	105,000	..	.....
1938	110,000	..	.....

We see then that the cost of discovery has increased nearly four times from 1930 to 1936. It is also of interest to note that 30 discoveries in 1939, and 30 again in 1940, will be required to keep the cost of exploration done in 1937, and being done in 1938, below $200,000 per discovery. Should the discoveries credited to the reflection seismograph in 1940 fall to as few as 11, then the reflection exploration now going on will have been done at the rate of $500,000 per discovery.

While a difference in cost between $40,000 and $140,000 or more per discovery may be considered negligible, in comparison with subsequent development costs, or with differences in the individual recoveries established later, one should not lose sight of the fact that had that nearly $150,000 per 1936 discovery been invested six years earlier, not only would more discoveries have been realized, but those discoveries would have been in the relatively more obvious class, of which Iowa, Manvel, La Fitte, and Hastings are typical, rather than in the less obvious class now being found, of which Satsuma, Tepetate, Eureka, and Sandy Point are examples.

Obviously, retooling has been required in exploration as well as manufacturing. However, manufacturing retooling follows from a decreasing demand in spite of lowering production costs, while exploration retooling follows from an increasing discovery cost in spite of a maintaining or even increasing demand. Thus Henry Ford found it necessary to retool because the demand for his Model T's had decreased materially, although the production cost was then remarkably low; while Gulf Coast exploration was retooled for geophysics because the existent exploration technique (of drilling on surface anomalies) was yielding discoveries only at costs which were prohibitive, even in spite of the increasing price of crude oil.

It is of interest to look for reasons why a decrease in discovery costs should follow a successful exploration retooling. First of all, it is obvious that success increases the hazard of future discoveries, by reducing the number of discoveries which can be made later. Second, the more obvious discoveries generally will be made while the technique is still relatively new to the area, leaving the less obvious to be found by the later, even though more proficient, technique. Third, and most important, is that an exploration retooling need not, in fact, should not, start from scratch, but should be applied first to the prospects indicated marginally but inadequately by the previously used methods.

The paradox of exploration costs is illustrated in Figure 3, where the effects of retooling in manufacturing costs and in discovery costs are illustrated in qualitative forms. The decreasing manufacturing costs for the Model T were interrupted by the retooling incident to the introduction of the Model A, and again for the Ford V-8. Conversely, the increasing costs for Gulf Coast discoveries in the pregeophysical days were interrupted by retooling incident to the introduction of geophysics. Ford manufacturing costs will not reach the low values established for the Model T if retooling is effected at too frequent intervals, and, conversely, discovery costs for the Gulf Coast will not increase to the high discovery costs, established in 1920-1923, if retooling is effected at sufficiently frequent intervals.

Detailed studies, similar to the above, of exploration history and associated discovery rates in other geological provinces will be found to show this same paradox of discovery costs and the favorable effects of retooling.

Geological Prospecting

The paradox of exploration is familiar to those geologists whose experience dates back to the early use of geology in oil finding. Geological prospecting can be divided into surface and subsurface exploration. In its day surface geology was as effective and spectacular as any of the subsequently introduced exploration techniques, and boasts a record of very low-cost discoveries. However, as has been the case with all subsequent successful exploration techniques, the difficulty of discovery by surface geology increased until it too was abandoned as a decisive exploration method, to be succeeded by subsurface geology.

Subsurface geology, however, is unique in that it will persist as the longest lived of all exploration methods, remaining until all geological provinces have been exhaustively wildcatted by the drill. Then, and only then, will subsurface geology demonstrate the prohibitive discovery costs which characterize the demise of any successful exploration technique. So, perhaps, the subsurface geologist should regard with kindly commiseration those proponents of other exploration techniques which exhibit more spectacular success but which are doomed to relative extinction in proportion to the rapidity with which they demonstrate high discovery rates. Other exploration techniques experience a season of spectacular display, to be outlived by subsurface geology, a

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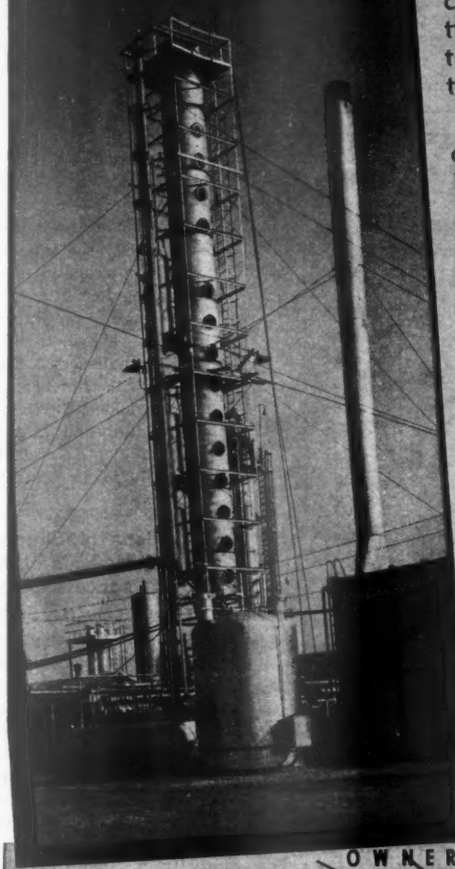

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The Number of Oil Fields Inversely Proportional to the Structural Relief

An examination of Figure 3 shows that each period of discoveries has resulted in the discovery of more oil fields and domes than in the previous period. Thus, in the first campaign, 31 discoveries were made; in the second, 61; and in the third, 116 to date. Though not at first obvious, these successive (total) increases have been attained by the discovery of structural closures of decreasing relief. Thus, the first period was characterized primarily by the discovery of shallow, piercement-type salt domes; the second by the discovery of the moderately deep salt domes; and the third, primarily, by nonpiercement-type domes and structures, with reliefs as low as 100 feet or less. That is, an increasing number of structures has been found as the differential uplift discernible has decreased. In other highly prospected areas the same tends to be true, as in the Mid-Continent, where the Oklahoma City type of structure is the exception rather than the rule.

Then, on the basis of past experience, if a successful retooling job can be accomplished, once again, even in this extensively prospected area, it is reasonable to expect that thereby an even greater number of oil fields will be discovered, though of generally lower relief, than were discovered in the immediately preceding (i.e., present) period of discovery. However, our present structural prospecting methods are based upon differential depth measurements for the recognition of structure; and if the relief, to be discovered, is less than that now being found only with difficulty by the reflection seismograph, then either that method must be improved, so as to measure differential depths in inches rather than in feet, or some other properties of structure must be used as bases for recognition and discovery.

Structural and Stratigraphic Prospecting

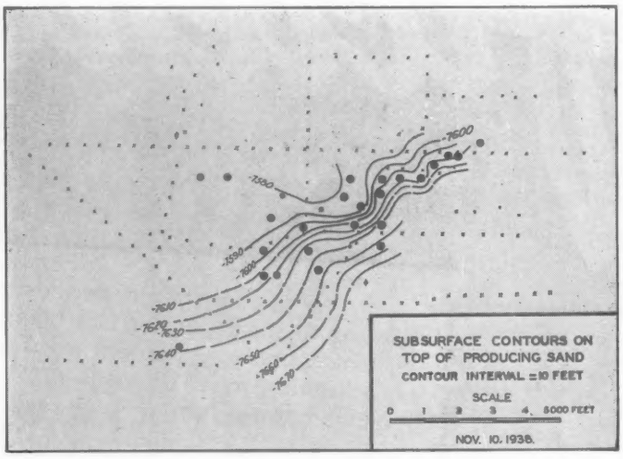
Exploration methods can be broadly developed into two general classes, first, those which rely upon vertical changes in the sediments (the structural prospecting methods), and second, those which rely upon lateral changes in the sediments (the stratigraphic prospecting methods).

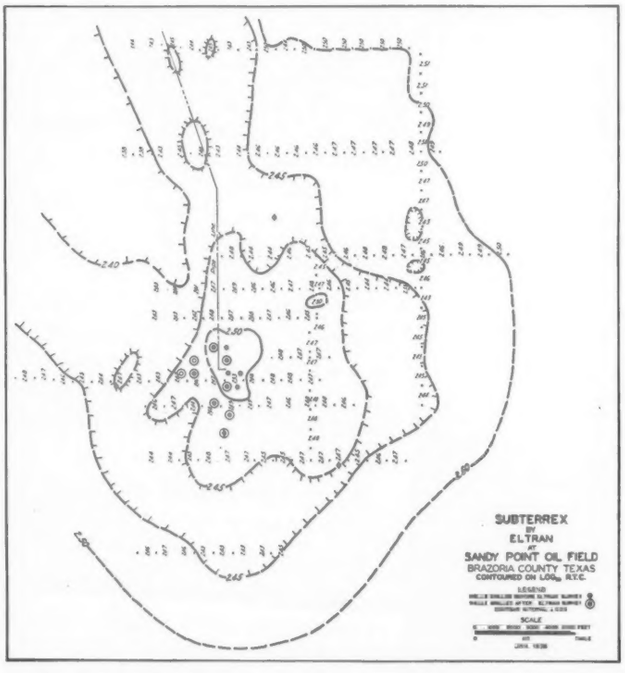
Structural Prospecting Methods

As Levorsen pointed out, our obsession with the anticlinal theory has led us to become accustomed more to looking for structural than for stratigraphic traps, and so we have become more than partial to the structural prospecting methods, those which identify structure through the determination of depths and depth gradients. In this class are the drill, the reflection seismograph (in both correlation and dip shooting), refraction profiling, and electrical profiling, (the Gish Rooney method), all of which yield data that are translatable into depths, with varying degrees of accuracy, or observational error. Each of these methods identifies and locates structure by means of differential depths, and the various finding powers are directly relatable, first, to the effective depth of penetration, and second, to the associated observational error.

Of the various structural prospecting methods, when examined by these two criteria, the drill has, undoubtedly, the greatest finding power, while the reflection seismograph lies intermediately between the drill and the refraction and electrical methods of profiling. The limitations of any of these methods can be discussed in terms of the drill, the most familiar of the various structural prospecting methods.

In the past few years, the effective penetration of the drill, i.e., the attainable drilling depth, has increased materially, and now is within shooting distance of 15,000 feet. The observational error of the drill has been reduced materially, first, with the introduction of micropaleontology, and second, with the introduction of electrical logging. These increased finding powers of the drill have been achieved, of course, only at materially increased costs, for in spite of the cost reductions which have followed from improved drilling techniques, the greater the depth of exploration the greater the cost of the test, other things being equal.





At the Sandy Point oil field with about 50 feet of actual subsurface closure, one reflection interpretation had predicted about 100 feet of closure, indicating a localized area of higher sedimentary velocities in the overlying sediments. We anticipated that this stratigraphic change could be shown by an electrical transient survey, the results of which are shown on this map which shows the course of development.

As we look for deeper and deeper production, which generally means working through more and more unconformities, two of the structural prospecting methods have fallen by the wayside, first, electrical profiling (though Jakoskey's continuous profiling is a gallant attempt to revive that technique) and second, refraction profiling. For exploration deep in the third dimension, these two structural prospecting methods are of definitely limited application, because of the cost and difficulty involved in securing material penetration, and because of the associated and relatively large observational errors.

The reflection seismograph approaches the usefulness of the drill as a structural prospecting device. First, there is no obvious limit to the effective penetration (one wishes that there were such, for with the drill the basement is readily recognized, but frequently not with the reflection seismograph). Second, like the drill, and unlike refraction and electrical profiling, the base of operations is short, and not unwieldy. However, the drill has the singular advantage that the actual makeup of the underlying sediments can be determined over a wide range of properties, from the size, shape, and other characteristics of microfauna, to the electrical and chemical properties of the penetrated strata, while the reflection seismograph can, unaided, determine only the time sequences of variations in acoustic impedances of the underlying formations.

However, this information, though limited as above, is obtained at a materially smaller cost than that yielded by the drill. Further, since the information yielded by reflections is much less unique than that from the drill, reflection depths must be available at materially lower costs to justify their being used.

Limitations of Structural Prospecting Methods of Reconnaissance Exploration

In random (i.e., wildcat) exploration by the drill, high discovery costs, on the average, have been found, and are to be expected. When I entered geophysics in 1925, I found that, prior to the use of geophysics in the Gulf Coast, serious consideration had been given to blanket exploration by the drill, using the following line of reasoning. Since the then known salt domes had been found at depths not usually greater than 1,000 feet, and their average diameters were known to be of the order of 1 mile, it was proposed to drill 1,000-foot tests at 1-mile intervals over the Gulf Coast in order to find the undiscovered salt domes. Using Henniger's figures, of $20,000,000 for the 675 wells drilled to find the one resulting dome, and assigning one of these wells to each square mile, the cost figures out about $40 per acre so explored.

Such a campaign, of course, would have found the additional shallow salt domes discovered later. Then, however, some hard-headed, unorthodox wildcatter would have found Port Barre, with cap rock at 2,800 feet, and the test wells would

have had to be redrilled or deepened to 3,000 feet. Then, upon the later discovery of Gueydan, with cap at 5,600 feet, the same story would have to be retold down to 6,000 feet. It is questionable, under such conditions, if the price of oil ever would have risen high enough (vide the later wildcat discovery of East Texas) to have resulted in the continuation of that program to the extent of finding Esperson, or Hankamer, with salt at 7,500 and 8,500 feet respectively.

Although the absurdity of such a program is apparent in perspective, much the same thing is going on in the Gulf Coast at the present time. In 1932-1933, the average reflections utilized were those returned from depths of 6,000-7,000 feet. As producing depths have increased, the depth of reflection exploration has kept pace. The general assumption at the present time is that each new deeper discovery justifies reshooting the whole Gulf Coast at or a little below that depth. Such uses of the reflection seismograph had resulted, in 1935, in enough reconnaissance exploration to have covered Chambers and Orange counties some 15 times, and, even so, 1937 was the peak year for reflection prospecting in the Gulf Coast.

In California, an interesting artificial limitation has been reported for the reflection seismograph. It is reported that, in the early reflection exploration made there, the records were arbitrarily cut off at about 5 seconds, so that, following later deeper discoveries, the San Joaquin basin had to be reshot in order to supply the information so casually disposed of by such earlier arbitrary treatment of the records.

These illustrations show the limitations of structural prospecting methods when used in reconnaissance. Since the drill, unassisted, could find all the oil fields in the world, an "extra" liberal drilling program (apologies to Levorsen[2]) might well result in a discovery or two. But the objective is not alone to find an oil field, but, to discover oil under the most favorable conditions of time, place, and investment. The drill, as well as all other structural prospecting methods, is too expensive to be used primarily for drilling dry holes or for condemning acreage like battleships.

This misuse, for such it is, of the reflection method in reconnaissance exploration, has undoubtedly impeded the further development of that device. First of all, in reconnaissance, the cost per depth, for many depths involved, assumes more importance than the quality of the individual depths. Therefore, the reflection seismograph has been developed so as to yield the best quality of data at the lowest cost over the conditions most frequently encountered. In reconnaissance exploration by that method, these requirements obviously amount to optimum operation in normal territory; so the device yields best data in negative territory, and, only too frequently, poor records, or N.R.'s when used over structure. Were the use of the reflection seismograph restricted to its proper field of usefulness, i.e., structural detail in advance of the drill, the quality of the data would be stressed, rather than the cost per depth, and the device would be developed to handle, satisfactorily, just those conditions where, at present, it tends to yield poor data at the points of crucial interest.

For an obvious illustration of the above point, it is generally conceded that reconnaissance exploration by the reflection seismograph on the Edwards Plateau is prohibitive because of the cost of drilling the holes now required there for satisfactory records. However, it would be not at all unreasonable to pay up to $1,000 per depth, for, say 20 depths, in order to detail satisfactorily a structure there prior to drilling a well, which would itself involve an expenditure of $100,000.

The highest finding rate to date is that established by the refraction seismograph, in the lakes and bays of South Louisiana, in 1927-1928, when the Geophysical Research Corp. found 11 salt domes at the rate of one for each 1.5 crew months, for the Louisiana Land & Exploration Co. In contrast with refraction profiling, (a structural prospecting method in that thereby depths are determined) refraction fan exploration is a stratigraphic method of prospecting, in that only lateral changes in sedimentation are observed, and depths are not determined. That is, after a salt dome was discovered by a refraction fan, (due to the lateral velocity change resulting from the intrusion of salt into the sediments) the depth to the top of the salt could be found only by a structural prospecting method, generally a refraction profile in advance of the drill. That is, stratigraphic prospecting methods yield high survey densities at low costs per acre, but no depth determinations; whereas structural prospecting methods yield depth determinations, but high survey densities only at high costs per acre.

Though not as outstanding as the stratigraphic change caused by the intrusion of salt into younger sediments, there are stratigraphic changes in the overlying sediments which result from underlying structure. Evidence for the existence of these stratigraphic changes has been reported from time to time, but until recently[3] they have not been recognized, more than sporadically, as important clues to the existence of underlying structure. In more or less chronological sequence of observation, these are as follows:

1. Induration of the overlying sediments. Recognized by the early cable tool drillers in Pennsylvania, and as "dome digging" of a generation

[2]A. I. Levorsen, "Stratigraphic Versus Structural Accumulation," Bulletin of the Amer. Assoc. Petrol. Geol., Vol. 20, No. 5, (May, 1936), pp. 521-530.

[3]E. E. Rosaire, "Shallow Stratigraphic Variations Over Gulf Coast Structures," Geophysics, Vol. 3, (1938), No. 2, pp. 96-115.

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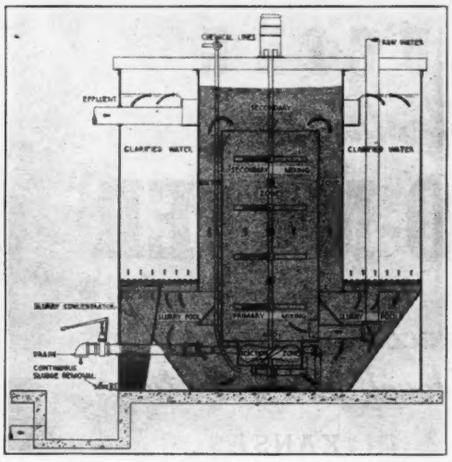

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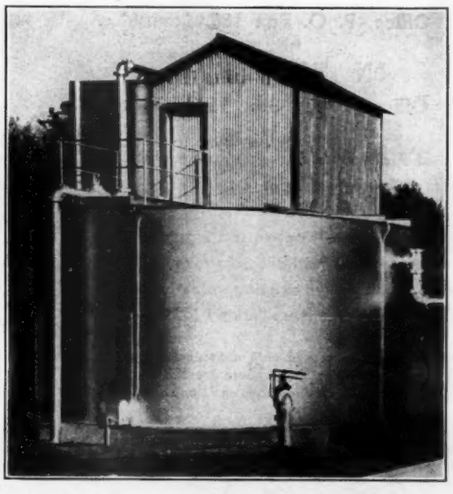

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ago in the Gulf Coast. Reported also as observable local silification and calcification in surface sediments over structure.[4]

2. Mineralization of shallow ground waters over structure. Reported by Minor,[5] and by Price.[6]

3. Locally increased seismic velocities in shallow sediments over structure. Observed over Conroe, Iowa, Turtle Bay, Van Vleck, and Permian basin structures (Means and Wasson) prior to discovery. Generally misinterpreted as due to the uplift of the older beds, normally characterized by higher seismic velocities.

4. Local variations in the electrical properties of the sediments overlying structure, as in the anomalies found by the Electrical Transient Method,[7] in the Gulf Coast, Permian basin, Kansas and elsewhere.

5. "Haloes" of leaking hydrocarbons, as observed a generation ago in the Gulf Coast, and recently rediscovered by the writer and his associates.[8]

The interesting feature of these shallow stratigraphic evidences of structure is that they are independent of the depth and the relief of the underlying structure. Thus, in a recent Eltran survey of Yoakum County, Texas, the Denver and Bennett areas were found to be outstanding Eltran anomalies, though the former has about 400 feet of relief, and the latter is primarily only a porous spot in the lime with barely 100 feet of relief. In the Permian basin, the magnitude of these shallow stratigraphic variations seems to be empirically but closely related to the porosity in the underlying Big lime.

It is obvious, then, that the easiest way to locate structure is to discover and localize one or more of the above mentioned shallow stratigraphic variations indicative of underlying structure. Since these properties are not related to the depth nor to the relief of the underlying structure, such properties (i.e., the depth and relief) can be determined only by the use of one or more of the structural prospecting methods, such as the reflection seismograph or the drill, over the relatively limited area covering the underlying structure.

One important point remains to be considered. Since these shallow stratigraphic properties of structure are not related to the depth nor the relief of structure, and since the more obvious structures have already been found by the recent intensive use of structural prospecting methods (the reflection seismograph and the drill), there will be an increasing number of cases where structures are indicated by stratigraphic prospecting methods which have associated reliefs comparable with, or less than, the observational error of the presently used structural prospecting methods. As a higher and higher percentage of the remaining undiscovered structures grade from structures of low relief to structures of zero relief (true stratigraphic traps), the reflection seismograph, unless radically improved, will become of diminishing importance in prospecting.

Preferred Prospecting Tactics

Just as there are rules for playing, but no rules for winning a football game, so any recommended sequence of prospecting is subject to modification to include the viscissitudes of individual cases. However, the following general deductions can be drawn.

1. The reflection seismograph, like the drill, is too expensive in operation to be used for the primary purpose of condemning acreage, i.e., on reconnaissance exploration.

2. The reflection seismograph should be restricted to the intensive detail of structure prior to drilling, and can be expected to yield results of significance only if the observational errors of the reflection data are appreciably less than the relief of the structure under examination.

3. Reconnaissance, or blanket exploration, should be restricted to stratigraphic prospecting methods, for several of these methods are characterized by fast coverage at low costs per acre, and so are much more suitable than structural prospecting methods for the primary purpose of condemning acreage (reconnaissance exploration).

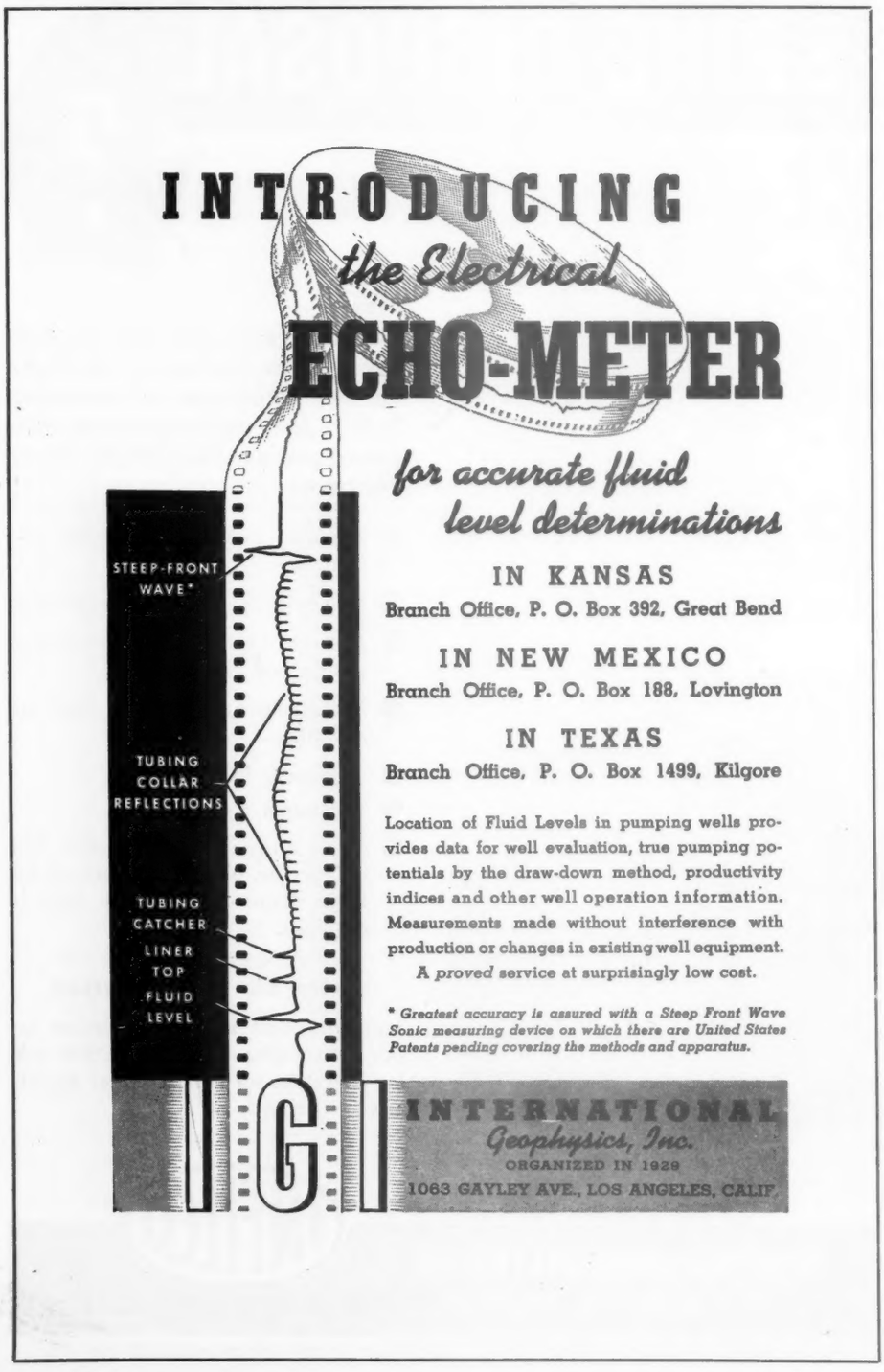
4. Until radical reductions have been made in the present observational errors of the reflection seismograph, stratigraphic prospecting methods will continue to indicate low or zero relief structure, which will then be confirmed by the drill in spite of apparently negative indications by the reflection seismograph.

Future Prospecting

Within the next year a marked change in prospecting tactics will take place. Whereas heretofore, reconnaissance, or blanket, exploration has been carried out almost exclusively by a structural prospecting method, the reflection seismograph, the future use of that technique will be primarily limited to the close, careful detail of structure prior to the use of the drill, necessitating the definite improvement of the reflection seismograph along the lines of securing first class data in those areas where, at present, the method is poorly, if at all, workable, as over structure in general, the Conroe trend, and the Edwards Plateau.

The sedimentary basins of the world can be divided into two general classes, those which have been more or less intensively prospected by

[4]A. A. Seager, Discussion, Geophysics, Vol. 3, (1938), No. 2, pp. 119-120.
[5]H. E. Minor, "Oil-Field Waters of the Gulf Coastal Plain," Problems of Petroleum Geology, Amer Assoc. Petrol. Geol., 1934, pp. 891-905.
[6]W. Armstrong Price, "Corpus Christi Structural Basin Postulated from Salinity Data," Gulf Coast Oil Fields, Am. Assoc. Petrol. Geol., 1936, pp. 270-308.
[7]L. W. Blau, U. S. Patent No. 1,911,137. Louis Statham, "Electric Earth Transients in Geophysical Prospecting," Geophysics, Vol. 1 (1936), No. 2, pp. 271-277. E. E. Rosaire, "Shallow Stratigraphic Variations Over Gulf Structures," Geophysics, Vol. 3 (1938), No. 2, pp. 96-115.
[8]E. E. Rosaire, "Shallow Stratigraphic Variation Over Gulf Coast Structures," Geophysics, Vol. 3, (1938). No. 2, pp. 96-115.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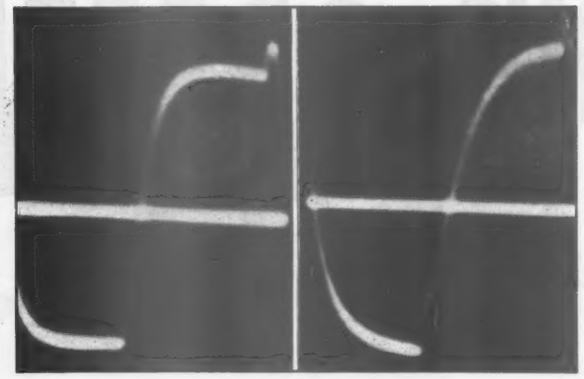
the reflection seismograph, and those which have not.

In the former class, many structures of low relief, grading into stratigraphic traps, remain undiscovered, having been passed up by the reflection seismograph because of the unsuitability of that device for recognizing structures of vanishingly low relief (i.e., League City, Galveston County, Texas). Such "misses" of the reflection seismograph can be found by the proper use of stratigraphic prospecting methods.

In the latter class, where blanket exploration by the reflection seismograph has not taken place (Georgia, the Edwards Plateau) or to but a limited extent (the Permian basin, Illinois, Michigan, Venezuela) the proper use of stratigraphic prospecting methods will serve to locate practically all favorable structures, of high and low relief.

In both cases, further exploration by the reflection seismograph will be advisable in the detail of the structures indicated as present by stratigraphic prospecting methods, to the extent of determining the associated relief prior to the use of the drill. In this respect the reflection seismograph will continue as a useful tool only to the extent that the observational errors now present in that method remain or can be made, appreciably less than the relief characteristic of the remaining undiscovered structures.



Photographic records used in the study of transient electric fields in oil exploration operations

Chemists Study Underground Corrosion of Pipe Lines

Scientists are making headway in their attack on the baffling chemical problem of corrosion of buried steel pipe affecting pipe lines carrying oil and gas along hundreds of miles of territory, according to Dr. Walter F. Rogers of the Gulf Oil Corp., Houston, Tex., in a research report to the American Chemical Society.

The investigation affects immense investments of the oil, gas, and water industries. In the oil industry alone, 125,000 miles of pipe, ranging in size from 4 to 20 inches, are used to transport petroleum and its products.

Doctor Rogers describes recent studies which approach the problem from the point of view of soil characteristics. It was found that while both the electrical resistivity, and the degree of acidity of soils have some effect on soil corrosion, the governing factor is the soil volume-water content.

Soils which become admixed with oil are frequently highly corrosive to the buried pipe, Doctor Rogers found. When the soil particles become coated with oil they do not coalesce easily but remain in the abnormal condition of being loosely packed and possessing a high porosity. The effect of oil thus changes what may be normally a noncorrosive soil to a soil in a condition susceptible of producing rapid corrosion rates of buried steel pipe.

"The most important conclusions which may be drawn from these tests deal with their practical value," Doctor Rogers pointed out. "It has been shown that the physical condition of a soil as regards its soil volume-water content controls its corrosion rate. By artificially or naturally controlling the soil volume-water content, any soil can be put in a condition which will allow corrosion to occur.

"In order to determine in the field whether or not a soil could be considered as corrosive, a seasonal study of its variation in moisture-air values would have to be made. Such a study would show definitely the corrosive action of the soil. Although this type of investigation is applicable to a study of a few soils, it cannot be made at present along an extensive right of way because of the mass of labor involved.

"Certain conclusions can also be drawn regarding the value of these studies in protective pipe coatings. The data show that the physical condition of the soil controls the corrosion rate. Suppose that a permanent wrapping material without the use of any coating between the pipe and the wrapper were put around the pipe.

"This wrapper might allow free water to leak through the lap of the wrapper and to the pipe, but the effect of the soil physical property would be removed. The pipe would then suffer such corrosion as is experienced under slow conditions of wetting and drying. Although this may be fairly rapid under some conditions, in all probability the corrosion rate would be much less than if the pipe were exposed to the soil.

"If a coating were placed between the pipe and the wrapper, the corrosion rate would be further reduced. It is believed that the use of a permanent nonrotting wrapper for a pipe is the most important part of any protective coating system and can alone be relied upon to prevent the majority of the soil corrosion which would otherwise occur."

Among the first in the United States to be concerned with the problem of underground corrosion was K. H. Logan. His attention was first directed to this subject through the corrosion of city water and gas pipes caused by the leakage of direct currents from street railway systems.

The results of these studies showed that factors other than stray current leakage could be responsible for corrosion of buried pipes and that these factors arose from the contact of the pipes with soils. This work led to the tests of the National Bureau of Standards where duplicate sets of ferrous pipe materials were buried in each of a number of test soil locations scattered over the United States.

The American Petroleum Institute later recognized the problem of underground corrosion by forming a subcommittee to foster investigations of this subject.

MARSH BUGGY OF ALL WELDED STEEL CONSTRUCTION

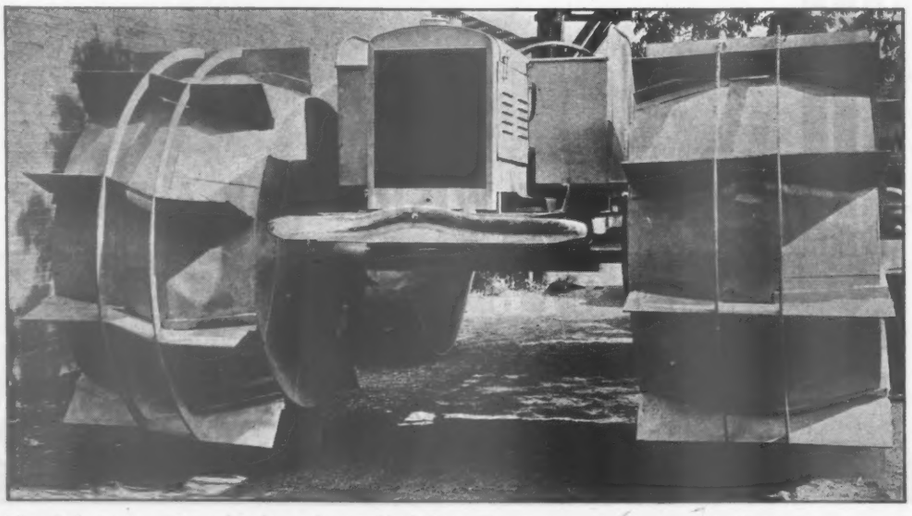
A "marsh buggy" has been built of arc welded steel throughout, even to the tires which are arc welded steel drums.

On water, marsh, or highway, this "marsh buggy" is capable of carrying a 6,000-pound load. This is possible because the welded unit is so constructed that it will both float on water and operate on land.

The complete "buggy" weighs 10,000 pounds and measures 21 feet in length and 15 feet in width overall. The wheels, which are 7 feet in diameter and 4 feet wide, are of an air-tight construction making it possible for the unit to float. The entire machine is welded with "Fleetweld" electrode, manufactured by the Lincoln Electric Co., Cleveland, Ohio.

The unit has an operating speed of 2 miles per hour in water, 7 miles per hour in marsh and 12 miles per hour on the highway.

This "marsh buggy" was constructed by the Stanolind Oil & Gas Co. in its Dallas, Tex., shop and is to be used for transportation and exploration work.

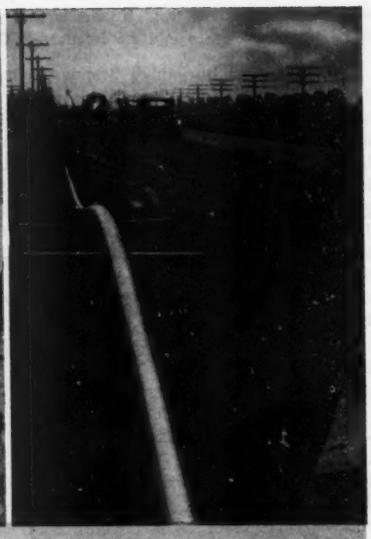


Marsh buggy with welded steel tires built by oil company for transportation over swamps

CRUDE GOES TO MARKET

A PIPE LINE . . .

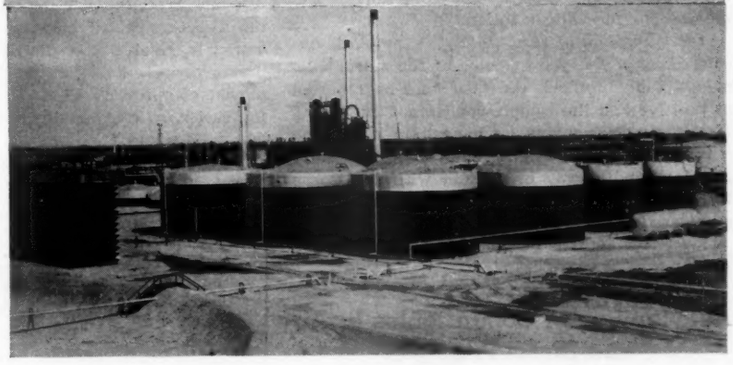
NATIONAL SEAMLESS used extensively in new line connecting field and refineries



Corrosivity Tests located "hot spots" on the line south of Cheyenne. Here, workmen are coating the pipe with a special paint and kraft paper. The smooth surface of NATIONAL Seamless Pipe helps produce a more impervious corrosion-resistant coating. Much of this project, however, required no additional protection over the regular mill enamel coating.

Despite the Vibration of nearby railroad traffic, this section of NATIONAL Seamless Pipe is buried no deeper than the remainder of the line. NATIONAL Seamless Pipe, because it is forged from solid steel, is especially resistant to the effects of vibration and sudden shocks. Because this pipe is Seamless, it affords the greatest possible protection against the "unexpected."

This Modern Refinery will consume 3,500 barrels per day of Lance Creek crude. It is one of four refineries which will be fed by the new pipe line. NATIONAL Seamless finds many applications in refineries, wherever high pressures and high temperatures are handled, for example, in hot oil lines and still tubes.



ONE of the largest pipe line projects launched in recent years in the Rocky Mountain area is the new oil transmission line connecting the productive Lance Creek, Wyoming, field with refineries in Denver, Cheyenne and Glenrock. The project totals 297 miles, and will furnish the first positive outlet for Lance Creek crude.

Of major significance in the construction is the extensive use of NATIONAL Seamless Line Pipe. For this is a line intended to provide economic oil transmission for many years. And NATIONAL Seamless is a pipe that provides the extra margin of strength necessary to withstand unexpected pressures, ground settlement, and other unpredictable stresses.

Elevations vary from 4,100 feet at Lance Creek to 6,145 feet at Cheyenne. For handling the high pressures required to move oil through this mountainous territory, NATIONAL Seamless has many times proved itself the safest, surest investment. NATIONAL Seamless means pierced from a solid billet of the finest quality steel. Pipe produced by this process gives you greatest assurance of full wall strength throughout, ample ductility for easy bending, and uniformly straight lengths.

The use of NATIONAL Seamless Pipe in this new line exemplifies the trend of today in pipe line construction. Seamless takes much of the guesswork out of the pipe—puts dependability right in the specifications.

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QUESTIONS ON TECHNOLOGY

By Charles K. Francis, Ph. D., Technical Editor

Standard Doctor Test Solution and Interpretation of Results

Is there a standard procedure for making the solution used in the doctor test? If there is, will you kindly furnish the reference and the details?—F. G. I.

The National Bureau of Standards has issued specific directions for the preparation of a doctor solution and the interpretation of the test results in several bulletins. It appears that there may be some variation, 120 to 140 grams, in the quality of NaOH and also a range of from 20 to 30 grams of PbO per liter. However, approximately 125 grams of NaOH and 60 grams of PbO per liter are more often mentioned. This is a solution of sodium hydroxide in water containing approximately 11 per cent NaOH and is about 16.2° Be. gravity.

The directions following are from Circular CS3-38.

Doctor test as follows:

Sodium plumbite (doctor solution).—Dissolve approximately 125 g. of sodium hydroxide (NaOH) in 1 liter of distilled water. Add 60 g. of litharge (PbO) and shake vigorously for 15 minutes or let stand with occasional shakings for at least a day. Allow to settle and decant or siphon off the clear liquid. Filtration through a mat of asbestos may be employed if the solution does not settle clear. The solution should be kept in a tightly corked bottle and should be refiltered before use if not perfectly clear.

Procedure.—Shake vigorously together in a test tube 10 ml. of the sample to be tested and 5 ml. of sodium plumbite solution for about 15 seconds, and allow to settle. The quantity of sulfur used should be such that practically all of it floats on the interface between the sample and the sodium plumbite solution.

Interpretation of results.—If the sample is discolored, or if the yellow color of the sulfur film is noticeably masked, the test shall be reported as positive and the sample condemned as "sour." If the sample remains unchanged in color, and if the sulfur film is bright yellow or only slightly discolored with gray or flecked with black, the test shall be reported negative and the sample considered "sweet."

Reference: National Bureau of Standards, Stoddard Solvent, Commercial Standard CS3-38.

Auto-Ignition of Combustibles In Air and Diesel Principle

Is it possible for an explosive mixture of either gas and air, oil and air, or gasoline vapors and air, to be exploded without the presence of an igniting spark from another source? That is, could the explosive mixture be set off within itself?—A. H. R.

Gas, oil vapors, or mixtures of combustible materials, with air are subject to auto ignition under favorable conditions of temperature and pressure.

Hot gases and vapors, if the temperatures are above the ignition point, ignite when released to the atmosphere. This is frequently the cause of fires in petroleum refineries and industries which make or use such substances. The fact that heat is generated when air is compressed is the foundation for the principle of the Diesel engine. A description of the operation will make this clear.

With the intake stroke air only is drawn into the cylinder, then, when compression is almost completed, the fuel is sprayed in. The portion of air in the cylinder is compressed to about 540 pounds per square inch, developing a temperature over 1,000° F., which is ample to ignite the fuel oil. The spontaneous ignition of the fuel releases enough energy to produce the power for the power stroke. At the end of this stroke the exhaust of valve opens, to permit the escape of combustion gases, and then closes. Now the cylinder is clear for repetition of the cycle.

The original patent of Rudolf Diesel described an engine which compressed the air charge to 2,000 pounds, producing a temperature over 3,000° F. This was later reduced to 500 pounds compression pressure and largely used in the modern Diesel engine. The original idea of auto-ignition of the fuel is the important factor retained in the modern engine, which enables it to use cheap fuel oil. No sparking or ignition devices are required on the Diesel engine.

For the purpose of quickly setting the engine into operation, some sort of starting device is used on most Diesels. These are described in Diesel Engineering Handbook.

"In arranging for a method of rotating a Diesel to enable it to reach a speed sufficient to bring the air charge to the oil-igniting temperature, four systems are in general use: (1) Air starting; (2) electric-motor starting; (3) a small gas engine with a Bendix drive to turn the Diesel until sufficient speed is reached to permit firing of the injected fuel and (4) starting the Diesel on gasoline through the use of a carburetor and an increased cylinder clearance.

"Formerly, when all Diesels were of the air-injection type, the starting air was obtained from the direct-connected injection-air compressor and stored in receivers, or air bottles. High starting pressures were usual, although a few engines employed compression-relief devices to make starting easier, so that an air pressure of 300 pounds was satisfactory."

Reference: Morrison's Diesel Engineering Handbook, p. 603.

CHEMICALS FOR THE PETROLEUM INDUSTRY

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Gas—1.5620.

Boiling point, °F.— —48.

LIMITATIONS

Purity, per cent, min.	99.0
Distillation—Complete within 1° C. from initial to final boiling point.	

Note—Highly flammable, keep away from flame and sparks.

Caustic Soda For Hydrogen Sulfide Removal From Raw Gasoline

I would like to have an accurate method for determining the alkalinity of a caustic soda solution used for scrubbing hydrogen sulfide from untreated gasoline.—H. K.

Caustic soda and sodium sulfides may be determined by means of suitable titrating methods. However, it appears the important matter here is the exhaustion of the caustic soda. Sodium hydrogen sulfide (NaSH) cannot be present in the solution so long as sodium hydroxide (NaOH) is present, the essential reaction being:

$$2NaOH + H_2S = Na_2S + 2H_2O$$

$$NaOH + H_2S = NaSH + H_2O$$

$$Na_2S + H_2S = 2NaSH$$

Therefore all that is required for control is to maintain enough NaOH for your conditions. These vary with volume, speed, temperature, contact, etc. A very large volume of low percentage solution will often do a better job than a small volume of a concentrated wash solution. In some plants a qualitative test with a suitable indicator appears to be sufficient although quantitative determination of the NaOH is more reliable. N/10 hydrochloric acid is often used but the N/0.5 sulfuric is suitable if available.

The sodium hydroxide is the essential reagent for the neutralization of the hydrogen sulfide. So long as it is in excess the sodium sulfide alone can be formed, but when it is lacking the sodium acid sulfide is produced.

It is wise to maintain a good caustic concentration when washing a raw gasoline because there is a tendency to reduce mercaptan sulfur. The details of caustic washing have been studied by Ridgway. He states in The Oil and Gas Journal that the weight of mercaptan sulfur removed per pound of caustic by a dilute solution is considerably greater than where a more concentrated solution is used. There is no apparent gain in using a solution containing more than 15 per cent sodium hydroxide or about 22° Be.

Michigan combination high-pressure gasoline having a mercaptan content of approximately 0.05 per cent mercaptan sulfur, was washed with 20 per cent by volume of 16 Baume caustic soda. The solution was then used to wash another batch of gasoline and the process repeated until used in some 20 washes.

A thorough treatment with sodium hydroxide solutions ahead of the doctor treatment is always advisable. It means a saving of lead if the doctor solution is used and in some instances it has been found with adequate alkali washing the doctor sweetening is not required.

Additional details may be found in the reference.

Reference: C. M. Ridgway, Improving Gasoline by Caustic Washing, The Oil and Gas Journal, March 31, 1938, Page 83.

Questions on Petroleum Technology may be sent to Dr. Charles K. Francis, The Oil and Gas Journal, Tulsa, Okla. When a copy of the answer is desired, postage should be included.

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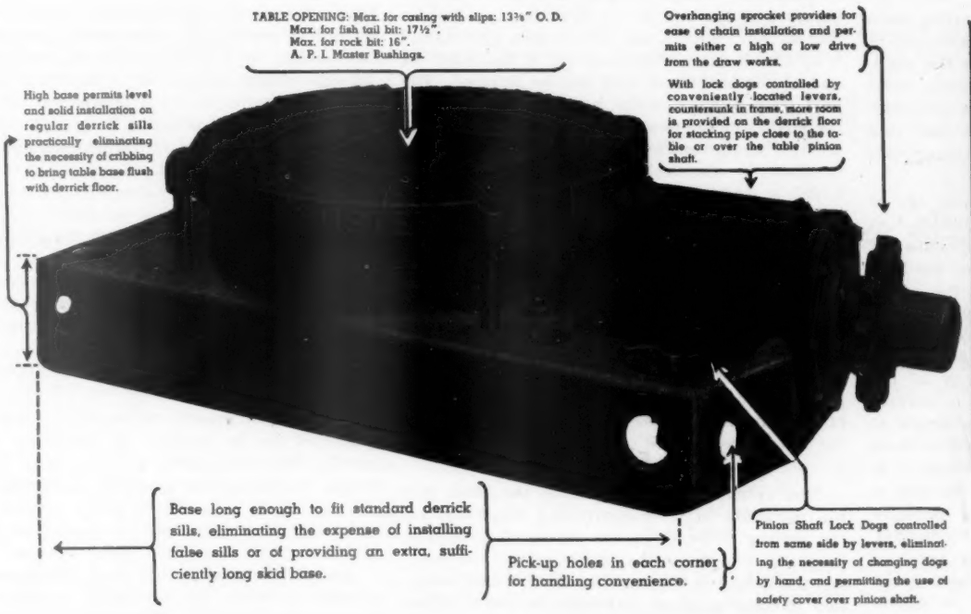
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PROBLEMS FROM READERS

Edited by L. G. E. Bignell

Bottom-Hole Pressure Used in Well Operation

How may bottom-hole pressures be used in an effective manner in the operation of oil wells? Is it better to take bottom-hole pressure readings to determine the conditions within the reservoir around the well or to use productivity curves and other data to determine the best operating conditions for a well?—M. Y. W.

Since 1930 bottom-hole pressure measurements have been taken in practically all oil fields but the data secured have been used up until recently mostly to determine conditions for the field as a whole rather than to be applied to operating conditions in individual wells. The new trend in engineering practice is to use data secured in this manner for the solution of current operating problems and this type work has been gaining favor recently.

The application of pressures to operating problems is not new but the precise measurement of effective pressures is the new phase of the work. Tubing and casing pressures of flowing wells have always been important factors in determining well operating conditions and under restricted production due to proration their importance has increased.

Changes in pressures, correlated with age or with rate of production have been considered as giving important information as to the quality of the well, sand conditions, conditions of the bore hole through the sand, and whether the equipment in the hole is operating properly. The reasoning which has led to such interpretations is sound, but too often the pressures are misleading. Changes in fluid level, specific gravity of the fluid, or gas-oil ratio cause changes in surface pressures which may not represent changes at the bottom of the hole. The difference between the pressure back in the sand and the pressure in the hole at the face of the sand causes the well to produce, and a change in differential pressure may result in a change in rate of production. When interpretations are based on pressure changes at the bottom of the hole where variations of fluid level, specific gravity, or gas-oil ratio have no effect they are much more dependable.

A general study of bottom-hole pressures throughout the entire field has a direct application to the operation of a particular lease or an individual well. Bottom-hole pressure surveys of the field will provide data which will assist in making a more accurate estimate, much earlier in the life of the field, of the time when wells must be produced by artificial lift and of the amount of fluid that will have to be handled. It is of considerable value to know within reasonable limits when the wells will have to be pumped but it is useless to install pumping equipment years in advance of its requirement; but on the other hand, it is not desirable to wait until the wells are dead before attempting to produce them by mechanical means. When bottom-hole pressure surveys indicate the volume of fluid to be handled will be small, the type and size of equipment may be quite different from that selected when the quantity anticipated is large.

Pressure data can be secured from a well which can be produced at one or more lower rates, after a few wells in a field have produced at full capacity. Curves then can be constructed showing the correlation between the open-flow capacity, low rate of production, and bottom-hole pressure, while producing at the low rate, and the reservoir pressure. These curves can then be used to determine the open-flow capacity of any other well in the same field using the bottom-hole pressure at some known low rate of production and the shut-in pressure for data. When conditions will not permit open-flow tests, an open-flow capacity estimated from a low rate of production and the bottom-hole pressure will be more reliable than estimates based on low-rate-production tests using surface pressures only.

A bottom-hole pressure flow test will give the productivity of the well which will be unaffected by friction through the flow pipe, chokes, surface connections and equipment. A flow test is made by measuring the pressure decline from the static pressure at the face of the sand during a known rate of flow. Such a test will furnish information from which many characteristics of the reservoir and of the individual well can be deduced. The data thus obtained make it possible to estimate the quality of the producing reservoir, to indicate whether equipment in the hole—especially screen or liner—is effectively serving the purpose for which it was installed. Flow tests will also provide the best information on which to base an explanation of the cause of any change in well performance at a future time. The actual conditions in a well can be determined more quickly and more definitely with the aid of bottom-hole pressures than by production tests only.

When an oil sand is drilled with rotary tools, more or less water filters out of the mud into the porous sand. The presence of water in the face of the sand reduces the well's ability to produce.

Water Enters Sand

The volume of water entering the sand, and the reduction in productivity are dependent on the sealing property of the particular mud, the length of time the mud remains against the sand, and the weight of the mud in excess of that necessary to counterbalance formation pressure. When the well is produced, the infiltrated water will be gradually removed, and the permeability of the sand will return to normal. Under very low rates of flow this may require several weeks. Therefore, the first productivity test should not be made until the sand has been cleared of the water that may have filtered in from the mud during completion of the hole.

A reservoir rock should maintain its actual permeability throughout the productive life of the well. An apparent change may occur in gas-oil ratio, or presence of water. Deposition of salts, paraffin or sediment filtered out of the moving oil and gas may cause partial blinding of the openings, and the permeability will decrease materially. If such conditions occur, they can be determined by comparing the productivity index soon after completion with that at a later date. When the change in productivity is more than can be accounted for by change in viscosity, gas-oil ratio, or water, a small shot, acid treatment or paraffin removal and cleaning out may return the productivity to its original value. If the test shows no change in the productivity, cleaning out or other treatment cannot be expected to increase production.

The question of whether production from a flowing well can be increased arises frequently. In many cases it is believed that the production is flowing only from the top of a high fluid level. Such a condition is more likely to exist in a well that is producing through casing where the reservoir pressure and the gas-oil ratio are low. If the reservoir pressure is high and the bottom-hole pressure while flowing is low, there is little chance of increasing the rate of production by changing the method of production. It is much cheaper to test with a bottom-hole pressure gauge than to change the method of producing which a test would have shown to be unnecessary. If the bottom-hole pressures indicate a change in the method of producing is advisable, the same data will serve as a guide in making changes.

Accumulation of water in the bottom of the hole is frequently the explanation given for rapid decline in production. Water may accumulate in the bottom of a well, produced at a low rate through casing, in sufficient quantity to build up enough pressure to retard production. Sufficient water to retard production is not likely to accumulate in a well producing through the tubing, except when the rate of production is extremely low. Accumulation of water between the casing and tubing will not retard production. It cannot build up a pressure head higher than that at the bottom of the tubing. The pressure at the bottom of the tubing in any given well is dependent on the rate of flow, and such pressure must be balanced by pressure between the casing and tubing. This pressure may be due to gas, a column of oil, a column of water, or, as is generally the case, a combination of these conditions.

When a detrimental accumulation of water is suspected to be present, its presence can be readily determined with a bottom-hole pressure gauge. Pressures are measured at regular intervals of depth, for example, every hundred feet; and water, if present, will be determined by the higher pressure head for a given interval.

All oil produced is the result of pressure differences between the producing formation and the bottom of the hole. These pressures are basic, and any operating procedure depends on these pressures for its accomplishment.

Welding Tool Joints to Drill Pipe

In answering the question asked by H. W. B. in regard to the welding of tool joints to new pipe in the December 15 issue, Page 53, it was stated this is not customary practice. Attention has been directed to the Hughes Tool Co.'s counter bore weld tool joint, which has been found a most satisfactory solution of this problem. By using the Hughes counter bore tool weld, the point of maximum stress is moved away from the "last engaged thread." This increases the effective section of the pipe at that point and shields the section weakness by the thread "notch," thus preventing the concentration of stress in that vicinity. New pipe is shipped to the Hughes plant at Houston, Tex., where this work is done. Tests have developed that the welded connection is stronger than the body of the pipe itself.

FIELD OPERATIONS

Summarizing the Week's Developments

OKLAHOMA—An outpost 1 mile north of the Noble pool in Cleveland County had 5,000 feet of oil in the hole from perforations at 6,880-6,909 feet in Chicken Farm sand. Murray County was added to the oil producing areas of Oklahoma when the gas discovery well in the Davis pool flowed 30 bbls. of oil in eight hours, with the gas, the past week. Two new tests were started in the Ramsey pool, Payne County, 1 mile east of the community block.

KANSAS—Showing of oil in a wildcat southeast of the Bemis field indicated opening of an Arbuckle lime pool in Ellis County. Showings of oil and gas were reported in a rank wildcat in Kingman County. The Schroeder pool, Ellsworth County, and the Keighley pool, Butler County, were extended. Three pool openers were completed, two in Barton and one in Kingman County. A 4,238-bbl. well was completed in the Hittle pool, Cowley County.

WEST VIRGINIA—Three-quarters of a mile from old production in Pleasants County a 250-bbl. well producing from Squaw sand was completed, the biggest well in the state in months.

KENTUCKY—An old dry hole in nonproducing Christian County, 60 miles south of Henderson, showed a 25-bbl. production in Jett sand and is being tested for McClosky lime production at 988-1,015 feet.

TEXAS—A gas field was opened in Nueces County at 4,888-93 feet. Another pool along the Frio-Vicksburg trend in Jim Wells County is in prospect. The new Cheek pool in Jefferson County was extended 1½ miles, indicating a pool of major importance. An important test in Harris County was dry and abandoned. Garza County, in the north Permian basin, may have a new pool, although the discovery well has developed salt water with the oil. The Duggan pool has prospects of a 2-mile extension, and two Bennett field outposts are showing oil. Ordovician production was extended a half mile in Crane County. A 1,440-bbl. well was completed in the Avoca townsite pool in Jones County. Cooke County's deep sand pool opened in 1937 has its second well. It flowed 805 bbls. in 18 hours and 58 bbls. in the last hour. Two wildcats were started in eastern Texas in Houston County and one each in Angelina, Upshur, Morris and Van Zandt counties, all in eastern Texas.

INDIANA—A very remote wildcat in Gibson County opened a McClosky lime pool with a 400-bbl. well.

MICHIGAN—A severe crude price cut affecting most fields resulted from indiscriminate sales of Bloomingdale oil at 60 cents per barrel, which is far less than the crude is worth.

WYOMING—A completion in the Lance Creek field starts at 1,694 bbls. per day from the Leo sand. A wildcat well in Sublette County blew in with 20,000,000 feet of gas and 3,000 bbls. of water which froze making an ice mound around the rig. It had been shut in for the winter.

ILLINOIS—In the old Sandoval field, an ancient Benoist sand well was deepened to the Devonian lime and a 400-bbl. well is the result.

Completions in All Fields

(Week Ending December 17, 1938)

	Oil	Gas	Dry	Total	1938 total comp. to date	1937 total comp. to date
N. Y., Pa., and W. Va.	44	8	3	55	3,387	4,504
Ohio	1	9	4	14	942	1,228
Indiana	0	0	0	0	132	129
Kentucky	11	0	8	19	867	709
Illinois	76	2	17	95	2,123	326
Michigan	17	2	7	26	917	783
Kansas	16	0	3	19	1,529	2,536
Oklahoma	17	2	12	31	1,635	2,548
Texas:						
North Central Texas	29	0	22	51	2,944	2,627
West Texas	27	1	5	33	1,887	2,605
Texas Panhandle	9	1	0	10	542	814
East Texas	19	0	0	19	1,686	2,347
East Central Texas	1	0	1	2	333	690
East Texas Border	0	0	0	0	126	314
Gulf Coast Texas	24	1	2	27	1,273	1,518
Southwest Texas	32	2	18	52	2,108	3,099
Total Texas	141	5	48	194	10,899	14,014
North Louisiana	7	1	3	11	603	653
Gulf Coast Louisiana	8	0	5	13	476	436
Total Louisiana	15	1	8	24	1,079	1,089
Arkansas	8	0	1	9	242	177
Montana	3	0	1	4	107	217
Wyoming	6	0	0	6	19	107
Colorado	0	0	0	0	13	20
New Mexico	18	1	1	20	553	677
Utah	0	0	0	0	3	4
California	16	1	3	20	1,231	1,462
Total United States	389	31	116	536	25,814	30,530
Total previous week	365	50	111	526		
Week ending Dec. 18, 1937	400	38	116	554		

Outstanding Fields--Highlights

(Week Ending December 17, 1938)

FIELD—	Rigs up	Wells drlg.	Weekly oil completions	Initial prod.	Total No. oil wells	Daily av. prod.
TEXAS						
K.M.A.	20	34	8	6,432	870	18,499
Wasson-Bennett	9	26	1	1,540	178	10,236
Ector County	7	57	10	10,641	1,377	41,597
Winkler County	2	15	1	1,656	1,730	36,050
Howard-Glasscock	5	17	2	549	1,026	15,048
East Texas	16	31	19	1,124	25,824	371,598
OKLAHOMA						
St. Louis	6	29	2	367	736	26,500
Oklahoma City	3	8	1	105	1,087	106,500
KANSAS						
Barton County	2	17	5	2,453	390	10,718
Stafford County	3	19	3	1,669	215	5,284
Rice County	5	17	2	957	1,256	28,647
Russell County	3	22	2	1,481	1,173	21,937
NEW MEXICO						
Lea County	6	77	16	2,199	1,964	90,970
LA-ARK-TEX						
Rodessa, La-Ark-Tex	4	13	2	.....	1,051	64,330
Cotton Valley, La. (deep)	1	18	1	225	102	8,475
Schuler, Ark.	2	16	5	.....	130	18,195
Jennings, La.	1	13	2	963	128	24,268
MICHIGAN						
Freeman-Redding	10	17	3	2,750	42	6,384
ILLINOIS						
Central Illinois	56	415	75	18,700	1,969	108,830
CALIFORNIA						
Wilmington	5	11	1	341	586	96,600
KENTUCKY						
Birk City	6	11	2	350	105	4,874

Illinois and Kentucky

By STAFF CORRESPONDENT

Illinois' New Devonian Pool; McClosky Pool S. W. Indiana

CENTRALIA, Ill., Dec. 19.—A most important well is in the course of completion in the old Sandoval field, in Marion County, Illinois, producing from a pay in the Devonian limestone topped at about 2,888 feet, with the pay at 2,920-26 feet. The well is Southwest Oil & Gas Co. and Ohio Oil Co. No. 1 Benoist, in the SW NE Section 8-2n-1e, an old Benoist sand well deepened. It was reported this morning to have flowed between 260 and 300 bbls. in 18 hours. There are 20 other producing wells on the lease, which was developed about 30 years ago. The well flowed 12 bbls. the first five minutes and 15 bbls. in the next 15 minutes on Friday.

Ninety-five wells were completed in the state in the past week in review, 76 of which were oil wells, 17 dry holes, and 2 gas wells. The initial production of the 76 oil wells was 18,710 bbls. Marion County led with 48 new oils wells and 11,119 bbls. new production. Twenty oil wells were completed in Fayette County; a 401-bbl. well in Wayne County; four wells were finished in Clinton with a total of 238 bbls. of new production. Wildcat dry holes were completed in Wayne, Marion, Clay, Cumberland, Shelby, Piatt, Jefferson, Jackson, St. Clair, Wabash, Bond, and Clark counties.

A well estimated to be good for 400 bbls. a day of 38-gravity crude opened a pool in southwestern Gibson County, Indiana, not far from the Illinois State line. It is Hughes & Amos No. 1 in SE NW NE Section 13-3s-14w of second principal meridian, and about 20 miles south of the old Lawrenceville pool in Illinois and about 15 miles southwest of the old Princeton pool in Gibson County, Indiana. McClosky lime pay was found at 2,836-87 feet, total depth of the hole 2,920 feet. The well flowed 51 bbls. the first hour and was then shut in. Later it was opened for six hours, during which it flowed for two hours and then "went dead." Experienced observers placed an estimate of 400 bbls. on the well, which is not yet completed.

Following is the list of completions of the week in Illinois. The initial production given represents 24-hour output unless otherwise stated:

In Wayne County, T. W. Eason No. 2 Twist, NE SW NE Section 32-2s-7e, was dry and abandoned at 3,397 feet. Roche & Boyles No. 1 McPherson, C S half SE NE Section 4-2s-7e, McClosky lime at 3,253-65 feet, total depth 3,269 feet, flowed 401 bbls. in 18 hours through quarter-inch choke.

Salem Pool

In the Salem pool in Marion County, Texas Co. No. 2 H. Heydrick, NE SW SE Section 4-1n-2e, Benoist sand at 1,865-77 feet, pumped 80 bbls. Texas Co. No. 1 Antioch Church, NW cor. SW SE Section 5-1n-2e, Benoist at 1,746-78 feet, flowed 383 bbls. through 1-inch choke. W. C. McBride, Inc. No. 2 William Fyke Heirs, SW cor. NW SW SE Section 5-1n-2e, Benoist top 1,745 feet, Aux Vases top 1,812 feet, swabbed 150 bbls. (estimated). Texas No. 4 B. Fyke, SW SE SW Section 8-1n-2e, Benoist at 1,830-64 feet, shot with 40 quarts, flowed 160 bbls. (estimated), through 1-inch choke. Texas No. 1 W. D. Fyke, SE NE SE Section 8-1n-2e, Benoist at 1,867-80 feet, pumped 200 bbls. Frontier Oil & Gas Co. No. 1 Frederick Heirs, SW cor. NW NW Section 9-1n-2e, Benoist 1,828-66 feet, pumped 200 bbls. Texas No. 1 Snyder, NW NW NE Section 16-1n-2e, Benoist at 1,905-15 feet, pumped 80 bbls. Texas No. 5 B. Fyke, NW NE NW Section 17-1n-2e, Benoist at 1,843-79 feet, shot with 40 quarts, pumped 150 bbls.

Ed S. Hohmans, SE cor. NE SE SE Section 8-2n-2e, Benoist at 2,035 feet, Fredonia top at 2,246 feet, dry and abandoned at 2,261 feet. Texas Co. No. 4 E. Gett, SE SW SW Section 16-2n-2e, Benoist at 1,806-56 feet, flowed 160 bbls. through 1-inch choke. Texas No. 1 M. Johnson, SW SE NE Section 16-2n-2e, Benoist at 1,847-80 feet, flowed 144 bbls. through 1-inch choke. Texas Co. No. 3 E. Gett, NE SW SW Section 16-2n-2e, Benoist at 1,813-66 feet, flowed 165 bbls., 1-inch choke. Texas No. 1 E. Gett, SW SW SE Section 16-2n-2e, Benoist at 1,796-1,861 feet, flowed 175 bbls., 1-inch choke. Magnolia Petroleum Co. No. 13 W. O. Chitwood, NE cor. SW NW SE Section 16-2n-2e, total depth 1,845 feet, plugged back to 1,805 feet, flowed 185 bbls. Magnolia Petroleum Co. No. 9 W. O. Chitwood, SW NE SW Section 16-2n-2e, Benoist at 1,818-51 feet, flowed 192 bbls. Magnolia No. 5 W. O. Chitwood, NW SW SW Section 16-2n-2e, Benoist top 1,879 feet, pumped 150 bbls.

Illinois Fields

HIGHLIGHTS OF THE WEEK: A 400-bbl. Devonian-lime well was brought in on a 30-year-old Benoist-sand lease in the Sandoval field in Marion County, Illinois. A 400-bbl. well opened a pool in southwestern Gibson County, Indiana, producing from McClosky lime. It is in a remote part of a county that has been producing oil for many years. McClosky lime wells in the Salem pool, in Illinois, were unusually numerous and prolific in the past week.

Daily production of new pools, 108,830 bbls.; old fields, 10,985 bbls.; total, 119,815 bbls.

Completed oil wells, 76; operations, including locations, rigs up and wells drilling, 558.

Texas Co. No. 2 A. Sweney, NE NE NW Section 20-2n-2e, Benoist at 1,819-51 feet, flowed 90 bbls., 1-inch choke. Texas No. 1 A. Sweney, SE NE NW Section 20-2n-2e, Benoist 1,779-1,826 feet, flowed 105 bbls., 1-inch choke. Harry Blackstock No. 3 M. & I. R. R., NE SW NE Section 20-2n-2e, Benoist at 1,738-89 feet, pumped 200 bbls. Shell Petroleum Corp. No. 20 Young Heirs, SW SE SE Section 20-2n-2e, Bethel sand at 1,736-74 feet, shot with 15 quarts, flowed 762 bbls. Harry Blackstock No. 1 M. & I. R. R., CNL SE NE NE Section 20-2n-2e, Benoist at 1,765-1,809 feet, pumped 150 bbls. Magnolia Petroleum Co. No. 18 J. H. Young, NE SW SW Section 21-2n-2e, flowed 144 bbls. Magnolia No. 19 Young, NW SW SW Section 21-2n-2e, Benoist at 1,761-95 feet, flowed 195 bbls. Magnolia No. 12 Young, NE NE SW Section 21-2n-2e, Benoist at 1,827-57 feet, shot with 20 quarts, flowed 424 bbls.

Texas No. 8 D. Young, NW SE NW Section 21-2n-2e, Benoist at 1,802-61 feet, flowed 45 bbls. Texas No. 3 Young, NW SW NW Section 21-2n-2e, Benoist at 1,777-1,828 feet, flowed 50 bbls. through 1-inch choke. Texas No. 4 Young, NE SW NW Section 21-2n-2e, Benoist at 1,787-1,830 feet, flowed 45 bbls. through 1-inch choke. Texas No. 5 Young, SW SW NW Section 21-2n-2e, Benoist at 1,777-1,819 feet, flowed 50 bbls., 1-inch choke. Texas No. 7 Young, SW SE NW Section 21-2n-2e, Benoist at 1,806-49 feet, flowed 249 bbls. Texas No. 9 Young, SE SE NW Section 21-2n-2e, Benoist at 1,814-53 feet, flowed 50 bbls. Texas No. 7 N. Lee, SW NW SW Section 28-2n-2e, Benoist at 1,713-53 feet, flowed 50 bbls. through half-inch choke. Texas No. 6 Lee, NW NW SW Section 28-2n-2e, Benoist at 1,746-78 feet, flowed 55 bbls. through half-inch choke. Texas No. 5 W. Friedrich, NE NW SW Section 29-2n-2e, Benoist at 1,740-90 feet, flowed 400 bbls.

Magnolia Petroleum Co. No. 12 S. Shanafelt, SE SW SW Section 29-2n-2e, McClosky pay at 1,875-99 feet, flowed 552 bbls. Texas No. 7 Friedrich, NE SW SW Section 29-2n-2e, Benoist at 1,700-85 feet, flowed 45 bbls. Texas No. 8 Friedrich, SW NW SE Section 29-2n-2e, Benoist at 1,740-77 feet, flowed 450 bbls. Texas No. 3 R. Shanafelt, SE NE NE Section 29-2n-2e, Benoist at 1,741-70 feet, flowed 100 bbls. through 11/32-inch choke. Texas No. 4 Shanafelt, SW NE NE Section 29-2n-2e, Benoist at 1,748-82 feet, flowed 100 bbls. through 11/32-inch choke. Texas No. 2 Hopkins, NE NE SE Section 31-2n-2e, Benoist at 1,641-91 feet, flowed 65 bbls. through quarter-inch choke. Texas No. 3 M. I. Stroup, NE SE NW Section 31-2n-2e, Benoist at 1,721-67 feet, flowed 257 bbls. through 23/64-inch choke. Texas No. 2 E. Farthing, NW NW SE Section 32-2n-2e, Benoist at 1,724-1,809 feet, flowed 850 bbls. Texas No. 4 Friesner, SE SE NW Section 32-2n-2e, Benoist at 1,712-70 feet, flowed 354 bbls. through quarter-inch choke. Texas No. 5 N. Lee, SE NE NE Section 32-2n-2e, Benoist at 1,745-99 feet, flowed 850 bbls. Texas No. 7 A. McCollum, SW NW NE Section 32-2n-2e, Benoist at 1,680-1,732 feet, flowed 400 bbls.

Baldwin Oil Co. No. 2 Holms, NW cor. NE SW NE Section 33-2n-2e, flowed 638 bbls. in 18 hours. Texas Co. No. 1 E. Farthing, SE NE SE Section 33-2n-2e, Benoist at 1,901-25 feet, flowed 146 bbls. through 1-inch choke. Texas Co. No. 3 S. Parker, SE SE NE Section 33-2n-2e, Benoist at 1,866-1,900 feet, flowed 200 bbls. Wiser Oil Co. No. 7 Weems, C E half NW NW Section 33-2n-2e, McClosky pay, casing perforated at 1,997-2,010 feet, with 35 shots and at 2,021-35 feet with 38 shots, flowed 400 bbls. in five hours. Helmerich & Payne No. 1 P. O. Anderson, NW SE SW Section 34-2n-2e, McClosky at 2,096-2,103 feet, flowed 288 bbls.

Pyramid Oil Co. No. 1 Roddy, a wildcat, W half SW SE SW Section 20-2n-3e, McClosky lime 2,495 feet, filling the hole with water, total depth 2,501 feet, dry and abandoned.

Clay County

In Clay County, Pure Oil Co. No. 9 C. B. Clay, C E half NE SW Section 27-1n-7e, Fredonia lime topped at 3,107 feet, pays at intervals from 3,112 to 3,164 feet, acidized with 5,000 gallons, flowed 281 bbls. through 1-inch choke. Pure No. 9 Tetrick D, C W half SE NE Section 9-2n-8e, Fredonia lime top at 2,958 feet, pays from 2,960 to 3,035 feet, acidized with 5,000 gallons, flowed 662 bbls. Pure No. 1 Orna Edens, C S half SE NE Section 5-2n-8e, pays at intervals from 2,957 to 3,085 feet, flowed 95 bbls. Pure No. 1 Orna Edens B, C S half SW SW Section 34-3n-8e, dry and abandoned at 3,049 feet.

In the Olney area in Richland County Wicklund Development Co. No. 1 Schneffer, C NW Section 21-4n-10e, was dry and abandoned at 3,208 feet. Texas Co. No. 2 Winterm Winter, SW SE SE Section 27-4n-10e, was dry and abandoned at 3,128 feet.

Fayette County

In Fayette County American Seismograph Co. No. 1 Bates, a wildcat, NE SW SW Section 16-5n-1e, was dry and abandoned at 1,656 feet. In the St. James pool, Texas Co. No. 5 Bennyhoff, NW NW SW Section 30-6n-3e, had Weiler sand at 1,600-11 feet, pumped 125 bbls. Smith & Sample No. 3 Garver, C N half NW NW Section 30-6n-3e, Weiler at 1,623-29 feet, pumped 90 bbls. of oil and 30 bbls. of water. Kingwood Oil Co. and Duncan No. 9 Yolton, NE SE NE Section

12-7n-2e, Weiler at 1,539-66 feet, shot with 5 quarts and 10 quarts, pumped 65 bbls.

Carter Oil Co. No. 1 Oscar McClain, NE NW NW Section 5-7n-3e, Louden pool, Bethel sand at 1,554-85 feet, shot with 20 quarts, flowed 996 bbls. Carter Oil No. 3 N. M. Hopper, NW SE SE Section 6-7n-3e, Bethel at 1,546-66 feet, shot with 20 quarts, pumped 140 bbls. of oil and 10 bbls. of water. Jarvis Brothers No. 6 Yokey, SE SW SE Section 6-7n-3e, Weiler at 1,497-1,513 feet, pumped 200 bbls. Carter Oil Co. No. 1 D. E. Goodson, SE SE NE Section 7-7n-3e, Bethel sand at 1,561-74 feet, shot with 20 quarts, swabbed 384 bbls. Carter No. 1 Maria Thornton, SW SE NW Section 7-7n-3e, Bethel at 1,588-1,610 feet, shot with 20 quarts, pumped 150 bbls.

Sherman and others No. 13 Burtschi, C NE SE Section 18-7n-3e, sand at 1,066-71 feet, estimated 4,000,000 feet of gas per day. Carter Oil Co. No. 1 J. Feezel, SW SW NW Section 29-7n-3e, Weiler at 1,519-56 feet, shot with 60 quarts, swabbed 511 bbls. Jarvis Brothers No. 1 Homan C, NE SW NE Section 29-7n-3e, Weiler at 1,551-82 feet, pumped 233 bbls. Mabee Consolidated Corp. No. 3 Homan, SE NE NE Section 29-7n-3e, Weiler at 1,537-91 feet, swabbed 300 bbls. Jarvis Brothers No. 4 Homan A, SW SE NE Section 31-7n-3e, Weiler at 1,536-61 feet, pumped 250 bbls. Jarvis Brothers No. 2 Homan B, SW NW NW Section 32-7n-3e, Weiler at 1,561-81 feet, pumped 170 bbls. Deep Rock Oil Co. No. 2 Schaub, SW NE SW Section 32-7n-3e, total depth 1,743 feet, small show of oil and a lot of water. Will be used as water disposal well. Carter Oil Co. No. 1 David Doty, SW SE NE Section 14-8n-3e, Weiler at 1,503-35 feet, flowed 300 bbls.

Carter No. 2 Nora Workman, NE SE NW Section 14-8n-3e, Weiler at 1,488-1,523 feet, shot with 30 quarts, flowed 200 bbls. through tubing. Carter Oil Co. No. 3 Hopper, SW NE SW Section 27-8n-3e, Bethel at 1,543-54 feet, dry, plugged back to Weiler at 1,456-98 feet and shot with 20 quarts, pumped 144 bbls. Carter No. 1 Kay Birdie, NW NW SE Section 29-8n-3e, Benoist sand at 1,449-77 feet, shot with 60 quarts, flowed 870 bbls. Carter Oil No. 2 McClain, SE SW SW Section 32-8n-3e, Benoist at 1,547-65 feet, shot with 20 quarts, flowed 396 bbls. Magnolia Petroleum Co. No. 1 Watson Unit, SW SW SE Section 33-8n-3e, Weiler at 1,479-1,513 feet, shot with 20 quarts, swabbed 190 bbls. Magnolia No. 2 Watson Unit, SE SW SE Section 33-8n-3e, Cypress top at 1,440 feet, total depth 1,496 feet, swabbed 180 bbls.

In Cumberland County Paul Henshaw and others No. 1 Mary Rea, SE cor. SW Section 18-10n-7e, McClosky lime top at 2,255 feet, total depth 2,301 feet, dry and abandoned.

In Shelby County, Prunty Production Co. No. 1 Hickey, SE SW SW Section 34-12n-4e, total depth 2,012½ feet, dry and abandoned.

In Piatt County, Max Pray and others No. 1 Baker, SW NE NE Section 17-18n-6e, dry and abandoned at 3,021 feet. Trenton lime was topped at 2,864 feet.

In Jefferson County Luttrell & Holleman, C SW SE Section 14-2s-1e, dry and abandoned at 2,401 feet. There was no showing in the McClosky lime at 2,346-64 feet.

In Marion County, Texas Co. No. 3 Kleinschmidt, NE S half NW SW NE Section 28-2n-2e, Benoist sand at 1,828-68 feet, flowed 200 bbls.

In Jackson County, W. R. Hays No. 1 Bouchet, NE NE SE Section 11-7s-2w, dry and abandoned at 2,007 feet. Fredonia lime was topped at 1,870 feet.

In St. Clair County, Mossbaugh No. 1 J. C. Miller, SE SE NW Section 31-1s-7w, hole full of water at 745 feet, total depth 1,234 feet, abandoned.

In Clinton County, O. S. Strickland and others No. 1 Williams, SW NE SE Section 12-1n-1w, Benoist sand at 1,362-78 feet, shot with 5 quarts, pumped 35 bbls. of oil and a trace of water. W. C. McBride, Inc., No. 6 Allison, SE cor. NE Section 12-1n-1w, Benoist at 1,366-76 feet, shot with 20 quarts, pumped 88 bbls. of oil and 6 bbls. of water. Richman No. 1 Elmer Jones, NW cor. SE NE NE Section 24-1n-1w, Benoist at 1,370-92 feet, shot with 5 quarts, hole was junked and abandoned. W. C. McBride, Inc., No. 2 Terry, NW NW NE Section 24-1n-1w, Benoist at 1,366-88 feet, shot with eight and 10 quarts, pumped 40 bbls. of oil and 30 bbls. of water. H. H. Weinert No. 3 Buehler, SW NW SW Section 36-2n-1w, Benoist at 1,358-75 feet, shot with 10 quarts, pumped 75 bbls.

In Lawrence County, J. Henry Loeb No. 5 Elliott Leighty, C NW SW Section 2-2n-12w, Bridgeport sand at 975-94 feet, shot with 80 quarts, pumped 10 bbls.

In Bond County, Lindsey Brothers No. 1 Fruitiger, SW SW SW Section 33-4n-4w, dry and abandoned at 1,130 feet. In Lawrence County, Kesl and others No. 1 Gillespie, C SE NW Section 13-4n-11w, Buchanan sand at 1,077-1,110 feet, 7,200,000 cu. ft. of gas.

In Wabash County, Hoffman No. 1 Wayne Smith, NW cor. SW NW Section 36-2n-12w, dry and abandoned at 1,595 feet.

In Clark County, H. R. Snavely No. 1 Hansy Handy, NW cor. NE SE Section 17-11n-12w, dry and abandoned at 2,440 feet.

New Wildcat Tests Started

In Shelby County, Corn and others No. 1 Wabash Railroad, C N half N half Section 27-10-5e, moving in standard tools. Tatum No. 1 Brownback, SE NE NW Section 25-12n-2e, rig up to deepen old well.

In Wayne County, F. P. Stocker No. 1 Blackburn, SE SW NE Section 8-2s-8e, rigging up rotary. New Penn Development Corp. No. 1 Wagner, 250 feet from W and 350 feet from N lines SW NW Section 30-2s-9e, rig up. H. H. Weinert No. 1 Cora King, SE NE SW Section 33-1s-7e, rig up; No. 1 Muhlbach, C S half NW SW Section 34-1s-7e, rig up.

In Marion County, J. J. Broadus No. 1 Dorothy Kaney, NE SW SE Section 1-1n-1e, spudded. F. W. Firman No. 1 Suggs, SE SW NE Section 11-2n-1e, drilling at 1,330 feet.

In Clay County, St. Louis Syndicate No. 1 McClane, NW SE SE Section 10-1s-6e, set 10-inch casing at 154 feet.

Wildcat Progress

In Jackson County, Ben Banner No. 1 Dean, NE NE SE Section 33-7s-3w, spudded.

In St. Clair County, Group Oil Co. No. 1 Reuss, C NW SW Section 28-3s-6w, drilling at 790 feet.

In Coles County, R. F. Wheless No. 1 Wilfred W.

(Continued on Page 74)

Old Well in Christian County Shows Signs of Production

OWENSBORO, Ky., Dec. 19.—A non-commercial well drilled 20 years ago on the Meacham farm near Bluff Springs, Christian County, and plugged and abandoned, has been cleaned out by Hickey, Thomas and others and was due for a shot in McClosky lime. The new owners of the well found production, said to have been as high as 25 bbls. per day, in the Jett sand at 482 feet. The McClosky "sand" was found at 988-1,015 feet. Bluff Springs is about 60 miles south of Henderson, and Christian is a Tennessee border county which has not produced oil. A McClosky lime pool in that district, so far from the McClosky pools in Henderson and Daviess counties, would open up a large region for exploration between the Ohio River and the Tennessee border.

A. A. Douglas has started a test on the Hann farm in the Ohio River bottoms south of the city of Evansville, Ind., but in Henderson County, Kentucky. Surface casing had been set at 350 feet. Two miles north of it in the Horseshoe Bend, Mr. Douglas has a test on the Rankin farm in which the crew cored the Mansfield formation around 1,300 feet, but the well is a McClosky lime test. Six other wells are drilling in the general neighborhood, some of them in the Spottsville district which was opened by Kentucky's largest McClosky-lime initial producer. Magnolia Petroleum Co. No. 1 Annie Green, a Spottsville test, was acidized in McClosky lime and started producing at the rate of 18 bbls. per hour. It is at a total depth of 2,210 feet. Magnolia, on the other hand, completed a dry hole at 2,216 feet in the Spottsville district, the well being No. 1 C. Neal.

In the Birk City field in Henderson County, no completions or new operations were reported. In the Daviess County side of the field, Major Oil Co. No. 2 Prudential Insurance Co. (the Brown tract) was a 200-bbl. well in McClosky lime, total depth 1,890 feet, and the same company's No. 3 Miralda Wahl was estimated at 150 bbls. per day at a total depth of 1,910 feet.

Completions and new work in other fields in Western Kentucky were as follows:

Butler County, Silver City district: Fred Phillips and Porter Evans No. 1 J. D. Brown, drilling 150 feet; Barnsdall Oil Co. No. 2 Martha Haws, 18-bbl. well, from Jones sand, total depth 521 feet; J. C. Miller, trustee, No. 4 Martha Haws, drilling at 100 feet; Anna K. Wilson No. 1 A. J. Peay, dry hole, through Jones sand. Huntsville district: Porter Evans and others No. 1 Ora Brown, drilling at 200 feet. Mount Zion School district: Barnsdall Oil Co. No. 5 E. C. Harper, 10-bbl. well in Jett sand, total depth 198 feet; Barnsdall Oil Co. No. 6 E. C. Harper, 5-bbl. well, in Jett sand, total depth 229 feet; J. F. Breslin and others No. 3 Opal Harper, dry hole, total depth 145 feet.

Daviess County, Masonville district: L. C. Young and others No. 2 Doctor Armstrong, rigging up. Utica district: O. D. Vickers and others No. 2 Ed Bennett, 50 acres, drilled into McClosky and cemented casing, will acidize; Daugherty & Ellis No. 2 N. C. Howard and Rex O'Flynn, rigging up. Cane Run School district: Mecca Oil Co. No. 9 Zula Johnson, McClosky saturation at 1,160-71 feet; after it was acidized the well flowed 3 bbls. per hour overnight. Birk City district: Ohio Oil Co. No. 2 Oscar Lively, drilling at 940 feet; Ohio Oil Co. No. 3 Oscar Lively, rigging up; Major Oil Co. No. 4 Prudential Insurance Co., Brown tract, drilling at 1,400 feet; Snowden & McSweeney and W. E. Hupp No. 9 Mrs. L. Taylor, rigging up.

Hancock County, Easton district: Chester Oil Co. No. 17 J. W. Baughn, 10-bbl. well, in Jett sand, 293-306 feet, total depth 309 feet; J. C. Ellis No. 23 Smith Heirs, rigging up. Patesville district: Roy Baird and others No. 1 Jess Burnett, moving in. Goering district: Galey, Flesher & Pollock No. 1 John Young, dry hole, total depth 872 feet.

Henderson County, Reed district: Spring Rose Drilling Co. and others No. 1 Barr & Heppler, dry hole, total depth 1,975 feet. Niagara district: Jay Petroleum Co. No. 2 N. R. Duncan, drilling at 650 feet. Spottsville district: Magnolia Petroleum Co. No. 1 Anna Green, after acidizing, 18 bbls. per hour in McClosky, total depth 2,210 feet; Magnolia Petroleum Co. No. 1 Miss C. Neal, dry hole, total depth 2,216 feet. Horseshoe Bend district, south of Evansville, Ind., A. A. Douglas and others No. 1 A. B. and H. Mann, set surface casing at 350 feet. Cairo district: Phillips Petroleum Co. No. 1 C. C. Sheffer, location; Phillips Petroleum Co. No. 1 Roy Sights, dry hole, total depth 2,585 feet.

McLean County, Cleopatra district: Cleopatra Oil Co. No. 1 R. T. Pinkston, spudding in.

Ohio County, Beaver Dam district: Roy Baird and others No. 1 Beaver Dam Milling Co., moving in. Heflin district: Anton & Ellis No. 1 L. E. Charlet, dry hole, total depth 1,380 feet. Oklahoma district: White & Vickers No. 2 Thurman Greer, 5-bbl. well, Jett sand, total depth 632 feet. Buford district: C. M. Amsler and others No. 1 W. E. Hinton, drilling at 550 feet. Davidson Station district: W. E. Hupp and others No. 3 Morgan Patterson, drilling at 210 feet. Beda district: T. M. Galey and others No. 1 W. H. Pirtle, rigging up.

EASTERN KENTUCKY

ASHLAND, Ky., Dec. 19.—Two small oil-well completions, a dry hole, and a plugging operation mark the reports of conditions in the Eastern Kentucky field this week.

Operator Smith reports a dry hole at 110 feet in No. 1, Watt Parks land, at Wagersville in Estil County. No other operations are under way in the district.

Monroe Franklin completed No. 1 A. C. Sparks at Pilot in the South Fork district of Powell County with a 5-bbl. daily oil production.

Perry and others completed No. 1 Ova Sparks, also at Pilot, with a flow of 5 bbls. of oil daily.

Inland Gas Corp. found No. 204, on Virginia-Kentucky Gas Co. lease on Right Fork of Troublesome Creek in Knott County, nonproductive, and ceased drilling at 1,500 feet, in Maxon sand. The firm will plug the well, the second failure on this land.

Other operations in Knott County are as follows: The Inland Gas Corp. was drilling at 2,186 feet,

(Continued on Page 87)

Southwest Texas District

By
F. L. SINGLETON

Gas Field Opened in Nueces County; Wildcats Show Oil

CORPUS CHRISTI, Tex., Dec. 19.—The opening of a gas field in Nueces County and the showing of two wildcats along the Frio-Vicksburg trend in Jim Wells County held the attention of operators in the Southwest Texas district.

Stanolind Oil & Gas Co. No. 1 George Clark, located on the Riverside prospect, northwest of Robstown, Nueces County, has been shut in following a production test in which it gave indications of being a large gas well through perforated casing at 4,888-93 feet. No gauge of the gas was made, but the working pressure on the tubing was 1,475 pounds and casing pressure 1,550 pounds. This test was drilled to a depth of 7,015 feet and was completed after 7-inch casing was cemented at 5,001 feet. The well is believed to be located on a large structure in view of the fact that it is located approximately a half mile southeast of Seaboard Oil Corp. No. 1 Wilson, which blew out, caught fire and cratered two weeks ago. The latter company is moving in material for No. 2 Ellen C. Wilson, approximately 4,600 feet due west of the cratered hole in Section 69 of the Wright Lands subdivision.

The Kelsey field, Jim Hogg County, was extended into Brooks County as a result of the showing of Humble Oil & Refining Co. No. 1 J. C. McGill, 4,664 feet east of production in the Ygnacio Rivas La Blanca Survey. Casing was being cemented on bottom at 5,010 feet, following a 20-minute drill-stem test at 4,725-50 feet in which 1,500 feet of pipe-line oil was recovered. The sand section was topped at approximately the level of the discovery well, which gives this field the appearance of becoming one of the largest producing areas in Southwest Texas.

Southwest of production approximately 1½ miles, and located in the Santa Teresa grant, Navarro Oil Co. No. 1 Guerra Estate was expected to be abandoned after the hole was drilled to a total depth of 5,008 feet, with no showing of oil or gas. The abandonment of this test apparently separates this structure from the Sun field, located several miles south in Starr County. In the latter field Sun Oil Co. No. 2 Amanda McKinney, a half mile north of the discovery well in Section 242, cored sand at 5,110-18 feet, and casing is being cemented for completion after a drill-stem test recovered several hundred feet of oil. Two miles west of production, the same company's No. 3 McKinney was coring for the sand below 4,510 feet.

Three Wildcats Abandoned

Three interesting wildcats in Nueces County were marked up as dry holes. North of the Luby field, L. A. Douglas No. 1 L. E. Smith, Section 6, Roberts and White subdivision, Petronilla ranch, was abandoned at a total depth of 6,512 feet. In the Bishop area, Humble Oil & Refining Co. abandoned No. 1 Michalek at 7,316 feet. On the Mustang Island prospect, Texas Co. No. 1 Little was abandoned due to mechanical trouble at a total depth of 7,751 feet. The well was scheduled to be drilled to a contract depth of 8,500 feet.

In the Saxet field, Nueces County, Richardson Petroleum Co. No. 3 Harrell, the second well to be drilled below 10,000 feet, is bottomed at 10,042 feet, and casing is reported to have been cemented on bottom to test several promising showings, although the details of the showings were not available. The outcome of this test is being watched with much interest in view of the same company's recent completion of No. 24 Cain and Sechrist. This well was completed as a distillate producer at a depth of 9,975 feet, but details of the sand record were not available as the well blew out and had to be completed under adverse conditions.

Another new field for the Frio-Vicksburg trend in Jim Wells County was indicated as a result of a drill stem test at Magnolia Petroleum Co. No. 1 Maun, located near the town of La Gloria in the southern part of the county. A 10-minute drill stem test at 5,275-82 feet, tested 950 pounds of working pressure, 15 feet of mud and 15 feet of amber-colored distillate. The well is coring ahead below 5,351 feet and additional sands showing gas have been logged at intervals from 5,282 to 5,341 feet.

In the same county, and northwest of Humble Oil & Refining Co. No. 1 Belitz, dry hole, and southeast of the South Alice field, Tom Graham No. 1 Hirsch, J. Stanfert Survey, has cemented 5½-inch casing at 4,689 feet, to test a sand at 4,604-4,620 feet. The well was drilled in search of the same horizon that produces at South Alice, but the section was dry. Two miles north of the town of Alice and located in the M. Barrera Survey, Arkansas Fuel Oil Co. spudded No. 1 Blinka.

Revives Clara Driscoll

An increase in drilling activity is anticipated for the Clara Driscoll field, Nueces County, following the completion of O. W. Killam No. 1 Meyers, which flowed 100 bbls. of oil in 13 hours through a one-eighth inch choke. The completion has attracted much attention as the well is located on the down-throw side of a fault and is structurally lower than wells on the opposite side of the fault. This well was deepened after the hole was abandoned about a year ago.

New activity is getting under way around the recent completion of Longhorn Drilling Co. No. 1 Miller, 1 mile south of the Sweden field in Duval County. This area has been classified as a new field rather than an extension, and the nomenclature committee of the South Texas Geological Society has named the field "Longhorn." Hiawatha Oil & Gas Co. has started drilling operations on No. 6 Miller, an offset, while M. M. Miller is moving in drilling equipment for No. 1 fee. The field was opened by the completion of Longhorn Drilling Co. No. 1 Miller which was completed in the "Gravis" sand at 4,892-98 feet.

McCampbell Activity

A second drilling "boom" for the McCampbell field in Aransas and San Patricio counties is getting under way as approximately 10 active operations are reported and location for several more tests have been made. The revival of drilling has resulted from the completion of Frank Grote No. 1 Tedford, which extended production within a short distance of the Aransas Pass city limits. During the week, Richardson Petroleum Co. No. 1 Mills was completed for an excellent producer to extend production approximately a half mile northwest of the Tedford producer. Production was obtained by perforating the casing at 7,118-25 feet, and the well flowed 498 bbls. daily through a three-sixteenths inch choke. The city commission of Aransas Pass has granted 33 permits to be drilled in the townsite, although it is doubtful if all of the permits will be approved by the Railroad Commission of Texas. The majority of the permits were granted to the Losoya Oil Co., and it is reported that a deal has been made with Heard & Heard, drilling contractors, to drill 26 wells on the western edge of the townsite.

Five miles north of the La Rosa field, and located in Section 26, Bonnie View subdivision, Rutherford Oil Corp. and others were running casing to test No. 1 E. Neiman, bottomed at 6,505 feet. Five-inch casing will be cemented at approximately 5,300 feet. The well is reported to have logged several sands, but details of the core record were not available as the well has been drilled "tight."

Location for an interesting outpost test to the East White Point field, San Patricio County, was made by J. B. Cage and others for No. 1 Kate Dunn, on the eastern edge of the White Point gas field, due west of East White Point. The well is in the M. M. Flores Survey.

In Laguna Madre Bay, offshore from Kleberg County, Pure Oil Co. and Superior Oil Co. staked location for a second test, No. 1-155 State, which is located 3,330 feet due west of No. 1 State, recently completed as a wet gasser. Actual drilling is not expected to be started until after the first of the year.

Steinberger Petroleum Co. No. 1 Albrecht, the first oil well completed in the Weser area, Goliad County, is flowing an estimated 1 bbl. of oily emulsion and brackish water per hour through a three-sixteenths inch choke under a tubing pressure of 115 pounds. The well was originally completed for an initial production of 4 bbls. of oil per hour from perforated casing at 5,238-44 feet, and is expected to be killed and recompleted in a shallower sand.

In the Seadrift area, Calhoun County, Hiawatha Oil & Gas Co. No. 1 Roemer was scheduled to be tested over the week-end. The hole has been plugged back from a total depth of 10,015 feet, and preparations were made to test at 7,800 feet. Should this test fail other sands which were logged on an electrical survey will be tested at 8,400 and 8,200 feet.

Taylor Petroleum Co. No. 1 Zapata, Block 15, Survey No. 334, 1 mile north of the Killam field, Webb County, is being rigged up to pump after it failed to flow when tested through perforated casing in the Government Wells sand at 2,045-54 feet. It is reported that 1,400 feet of oil is in the hole, and the well is expected to make a small pumper which will result in additional development between this test and the Killam field proper.

There were few important developments in the Balcones Fault-Line district. In Guadalupe County, Frank H. Glenn was attempting to complete No. 1 Appling as an Austin chalk producer. The hole is bottomed in the Buda lime at 2,218 feet, and a showing in the chalk formation at 2,130-37 feet is being tested. The Austin chalk was topped at 1,940 feet and cored to 2,137 feet. Location is in the Harriet Cottle Survey No. 14.

Fred Pederson No. 1 Brown, an Edwards lime test in Lee County, was treated with 5,000 gallons of acid, but the well was shut down after it showed nothing but acid water when the hole was swabbed. The hole is bottomed in the lime formation at 6,404 feet with 7-inch casing cemented at 6,380 feet. A slight amount of oil and considerable salt water was recovered before the hole was acidized.

SOUTHWEST TEXAS COMPLETIONS IN PROVEN FIELDS

(24-hour production)

Aransas County

McCampbell field: McAlester Fuel Oil Co. No. 1 Hoffman and Duphrone, perforated casing 6,864-68 feet, 125 bbls., three-sixteenths inch choke.

Bastrop County

Riddle field: Southern Cross Oil Co. No. 1 Riddle, 1,739 feet, abandoned.

Caldwell County

Salt Flat field: Martel Petroleum Co. No. 9-A Wright, 2,662½ feet, 16 bbls. oil, 190 bbls. water, pumping; No. 11 Wright, 2,660 feet, 45 bbls. oil, 105 bbls. water, pumping.

Calhoun-Victoria Counties

Heyser field: Humble Oil & Refining Co. and others

(Continued on Page 80)

West, Central and Panhandle Texas

By D. H. STORMONT

New Pool in Garza County; Numerous Pool Extensions

FORT WORTH, Tex., Dec. 19.—Garza County's new oil strike by the Gulf Oil Corp. and a possible 2-mile extension to the Duggan pool of Cochran County, centered the attention in the north Permian basin area while a one-half mile southeast extension to the Ordovician producing area of western Crane County attracted attention in the south basin.

Possibility that the Gulf Oil Corp. would perforate higher up in the hole at its No. 1 Swenson, discovery well in Section 25, Block 2, H.&G.N. Survey of Garza County, was indicated when it was found that the water was coming into the hole from the oil-paying horizon. Latest swabbing test of 150 bbls. of fluid per day, of which 40 per cent was water, was made after cementing off the lower 4 feet of perforations at 7,327-34 feet.

Two-mile southeast extension to the Duggan pool of southeastern Cochran County was assured at Texas Co. No. 1 Boyd, which is bottomed at 5,092 feet with 1,200 feet of oil in the hole. Oil was found from 5,059 feet to 5,092 feet. Location is in the center of Labor 25, League 56, Oldham County School Lands.

Prospective Extensioners

Two outposts to the Bennett pool of Yoakum County were seen as possible extension wells. Texas Pacific Coal & Oil Co. No. 15 Bennett, Section 677, one location west of production and pushing the field closer to the Wasson pool on the west, was swabbing an unestimated quantity of oil as the week closed, indicating as good a producer as any completed in the area. One mile southeast of the area, Shell Petroleum Corp. No. 1 Ruyts, Section 743, pumped 120 bbls. of fluid in 24 hours, of which 65 per cent was basic sediment and water. Test is bottomed at 5,266 feet.

In the Seminole area, Gaines County, two outposts are being closely watched. Adams & Bradley No. 1 Crain, Section 216, Block G, W.T. Survey, wildcat test 3½ miles north of the pool, was drilling below 5,070 feet. Amerada Petroleum Corp. No. 2 Riley, Section 229, northwest edge test, is bottomed at 3,397 feet, where the crew was preparing to run 7⅝-inch casing. The well had showings of gas at 3,124-30 feet.

South Basin Area

A half-mile southeast extension to the Ordovician flush production of western Crane County appeared assured at Gulf Oil Corp. No. 9 Waddell, Section 7, Block B-27. The well gauged at the rate of 22,800,000 feet of gas, which decreased in two hours to 14,740,000 feet. During the first hour of test the well made 6.82 bbls. of oil and distillate and in the second hour, 5.46 bbls. The distillate was reported turning darker in color, indicating an increasing oil content. Total depth is 5,966 feet. The well has shown a high volume of gas since it reached a depth of 5,900 feet, at which it tanked 46 bbls. of distillate in 12 hours, with 13,300,000 feet of gas.

Two miles north of the Deep Rock area of Andrews County, Anderson-Prichard Oil Corp. and Osage Drilling Co. No. 1 University, Section 13, Block 14, was drilling below 3,500 feet. The test had logged showings of gas from 2,998 feet to 3,010 feet, after which it was allowed to clean itself and gauged 8,000,000 feet of sweet gas.

WEST CENTRAL TEXAS

Jones County centered attention in West Central Texas as the two new areas discovered last month received considerable development.

Final gauge was taken and two offset locations staked to the Luther A. Hedrick No. 1 Dortha Akard discovery in southeastern Jones County, and in the G. Martinez Survey. The well tested 134 bbls. of oil in 24 hours from sand from 2,141-54 feet. Two locations have already been made offsetting the well and further development is expected soon. D. H. Bolin, large operator in the K.M.A. pool of Wichita County, made location for No. 1 Morrison, in the D. T. Bruce Survey, diagonally southwest of the discovery. Seitz & Hedrick staked a location for No. 1 Morrison as a west offset.

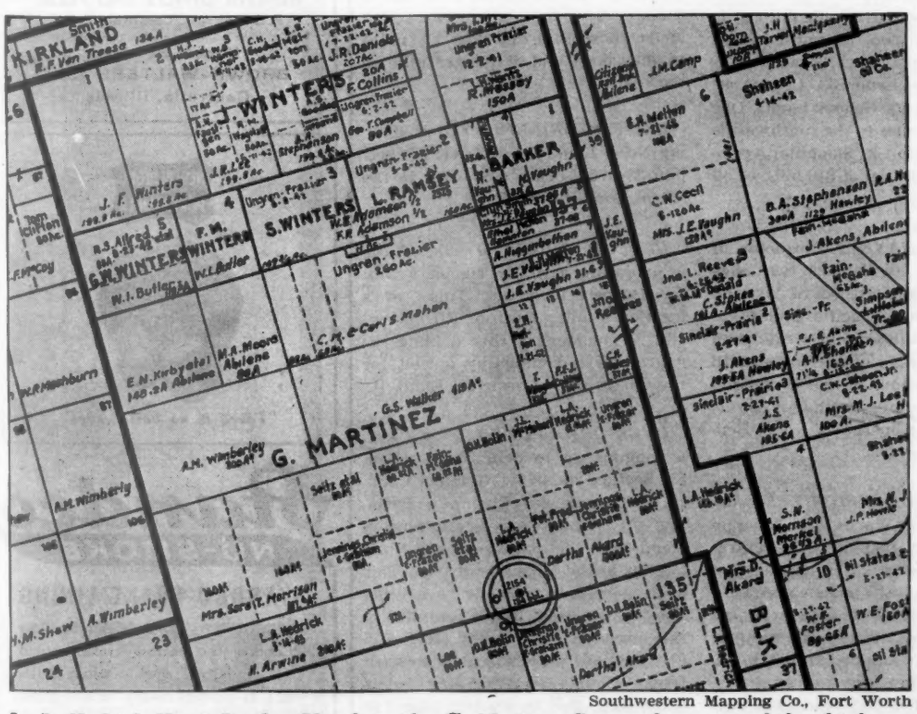
In the Avoca Townsite pool, Jones County, a gauge of 1,440 bbls. per day was registered by Iron Mountain Oil Co. No. 1 J. T. Taylor, north offset to the discovery well. No. 1 Taylor is located in Section 199, B.B.B.&C. Survey, and found pay at 3,215-26 feet. The pay in the discovery well is considerably lower, structurally, being at 3,247-50 feet. As a west offset to the discovery in the area, Ungren & Frazier, pool openers, are rigging up No. 1 T. L. Culwell, in Section 21. Several other tests are either drilling or preparing to drill in the area.

In the Avoca pool, which is in the extreme northeastern corner of Jones County, Groover & Rose and George J. Farrell are planning a test in the southeast part of Section 193, B.B.B.&C. Survey, 2 miles north of the field. It is in the Swenson lands and will seek production from the 3,000-foot level of the main pool.

Southwest Scurry County's new pool seemed assured of its second producer when Callahan No. 1 First National Bank was swabbing with fluid level at 2,100 feet. The test is a northwest offset to the Coffield & Guthrie discovery well and is bottomed at 2,542 feet with no water showing.

In Coleman County, Brannon & Murray No. 1 Dibrell is still testing in an attempt to establish production from the 3,200-foot level in the old shallow Echo pool. The well is credited with flowing 65 bbls. of oil in 24 hours on initial tests. Operators are considering acidizing the Ranger lime pay.

Iron Mountain Oil Co. and Groover & Rose staked location for a new Shackelford County wildcat. It will be No. 1 Davis, Section 55-13, T.&P. Survey, in the southwest part of the county.



Southwestern Mapping Co., Fort Worth

L. A. Hedrick No. 1 Dortha Akard, in the G. Martinez Survey has opened the third new pool in Jones County in three weeks

WEST TEXAS COMPLETIONS
(24-hour tests)

Andrews County

Barnsdall Refining Co. No. 5 Ford, 4,300-4,465 feet, 1,531 bbls. Great Western Production No. 1 O. B. Holt, dry and abandoned at 4,580 feet. Texas Co. No. 1-H University, 2,947-4,083 feet, 1,600,000 feet of gas.

Crane County

Humble Oil & Refining Co. No. 3-D University, 3,070-3,110 feet, 405 bbls. Standard Oil of Texas No. 1-6 University, 3,132-3,270 feet, 370 bbls.

Crockett County

Gilcrease Oil No. 2-16 University, 1,455-87 feet, 20 bbls.

Hockley County

Texas Co. No. 1-B Mallett, 4,993-5,035 feet, 179 bbls.

Ector County

American-Maracaibo No. 2-B Scharbauer, 4,145-75 feet, 1,060 bbls. Atlantic Refining Co. No. 3-C Johnson, temporarily abandoned location. Broderick & Calvert No. 13 Foster, 4,112-4,210 feet, 1,451 bbls. Gulf Oil Corp. No. 140 Goldsmith, 4,150-4,210 feet, 960 bbls. Shell Petroleum Corp. No. 8-A Scharbauer, 4,167-4,211 feet, 413 bbls.; No. 3-E University, 3,360-3,636 feet, 2,073 bbls.; No. 2-B J. E. Witcher, 4,095-4,260 feet, 591 bbls. Sinclair Prairie No. 2 Hugh Corrigan, 4,140-4,325 feet, 1,148 bbls. Stanolind Oil & Gas Co. No. 7 J. L. Johnson, 4,135-4,225 feet, 267 bbls. Sunray Oil

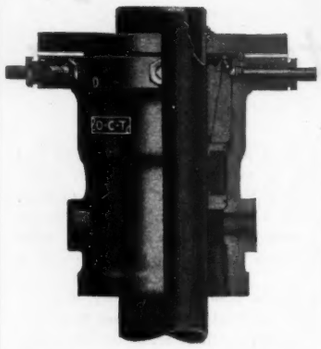
(Continued on Page 82)

O-C-T

TYPE C-9-PS

SLIP SUSPENSION

CASING HEAD



Permits landing casing at any desired point. Permits drilling and running casing through blowout preventer equipment flanged above. Packing, slips, and slip bowl passes through blowout preventer to seat in body of head. Packing compressed by weight of casing. Hold-down screws aid in compressing packing. Available with or without welding flange, which holds casing down and effects auxiliary seal above slips. Test pressures up to 10,000 lbs.

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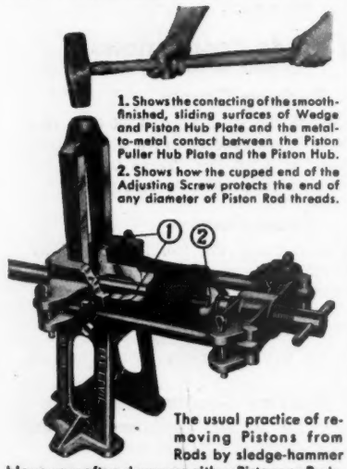

1. Shows the contacting of the smooth-finished, sliding surfaces of Wedge and Piston Hub Plate and the metal-to-metal contact between the Piston Puller Hub Plate and the Piston Hub.
2. Shows how the cupped end of the Adjusting Screw protects the end of any diameter of Piston Rod threads.

The usual practice of removing Pistons from Rods by sledge-hammer blows very often damages either Pistons or Rods, thus increasing the cost of pump maintenance.

The RED DEVIL Piston Puller removes badly stuck Pistons, without injury to either Piston or Rod, EASILY and QUICKLY. A few hammer blows on the top of the Wedge (see illustration) forces the Piston forward and loose from the Rod taper. Write for Bulletin No. 113-B.

OIL WELL MFG. CORP.

6000 SOUTH ALAMEDA STREET

LOS ANGELES, CALIFORNIA

CABLE ADDRESS "OWMCO"

Among the Drilling

OSAGE DRILLING CO., Oklahoma City, has started a 4,600-foot test for Anderson-Prichard Oil Corp., in Andrews County, Texas. The test is No. 1 University in Section 13, Block 14, of the University Survey. This company is also completing two wells in Yoakum County, Texas, one for Fikes & Murchison, the other for Toddie Lee Wynne, trustee for American Liberty Oil Co.

UNGREN & FRAZIER, of Abilene, Tex., have received contract to drill the third test in the new area opened last month by them in Jones County. Contract was received from Iron Mountain Oil Co. and the test will be a west offset to the discovery well. Ungren & Frazier are completing the second producer in the field, since its discovery by them, for Iron Mountain Oil Co. as its No. 1 J. T. Taylor, north offset to the discovery. When the plug was drilled the second producer tanked 75 bbls. of oil in one hour to indicate a larger producer than the initial well. The pool is a half mile west of the town of Avoca and in the B.B.B.&C. Survey. The pool is producing from the Palo Pinto lime which also produces in the Avoca pool of the northeastern corner of the county.

SID W. RICHARDSON, Fort Worth, Tex., has staked a 1½-mile outpost to the Slaughter pool of southwestern Hockley County, West Texas. Test is his No. 1 Coe, Labor 53, League 40, Maverick County School Lands. One and one-half miles to the southwest is Richardson No. 2 Slaughter, completed for an initial of 816 bbls. of oil daily.

F. T. BRAHANEY, contractor of Abilene, Tex., will drill two edge wells to the Bennett pool of Yoakum County for Texas Pacific Coal & Oil Co. On the southern end of the pool, No. 16 Bennett is a quarter-mile south of nearest production and in Section 695. A quarter mile northwest of this test will be the operators' No. 17 Bennett, in Section 696.

CULBERTSON BROTHERS, contractors of Fort Worth, Tex., have indicated a new pool in west central Coleman County at a test being drilled for J. D. Kynaston and J. D. Bozeman. Saturated lime was encountered from 2,685-90 feet and production was estimated at 25 to 30 bbls. daily. However, operators are drilling ahead to test sands expected at about 3,000 feet and 3,500 feet. If no further shows are picked up, the test will be plugged back, acidized and completed from the 2,600-foot level. Location is in the J. P. McCord & Sons lands of Section 41, B.B.B.&C. Survey, west of Glen Cove.

HELMERICH & PAYNE, INC., of Tulsa, are moving in equipment for a deep rotary test on Jesse Koonsman's land, 5 miles north of Camp Springs, in Scurry County, West Central Texas. The test will be drilled for Forest Development Corp. and is in Section 217, Block 2, H.&T.C. Survey. It will be a 5,000-foot test and is slightly southwest of the old Davis Pender well which encountered favorable showings around 4,280 feet.

M. J. DELANEY DRILLING CO. (Westmount Oil Co.) of Dallas, Tex., has completed No. 1 Amerada Petroleum Corp.-State, discovery well of the Lovington area, Lea County, New Mexico, for an initial production of 12,000,000 cu. ft. of sweet, dry gas daily. Flow was through 2-inch tubing set at 3,374 feet. Shut-in pressure of the well is 2,000 pounds and flowing pressure is 950 pounds. It is being produced to supply fuel for other drilling operations in the area. Location is in Section 12-17s-36e and is 6 miles south and 2 miles east of the town of Lovington. The well indicated a pronounced structural high in the area by logging all markers well above those in a dry hole 1½ miles to the south and a quarter mile to the east.

ZEPHYR DRILLING CO. is drilling No. 4 Lankford, SW NE SE Section 33-2n-2e, below 1,500 feet in the Salem area of Illinois.

CLAUDE DRILLING CO., Tulsa, is operating a rotary rig on a well for Herbert Gussman, Tulsa, at a location 5 miles south of Effingham, Ill. A spudder of this drilling organization is completing a well for the Carter Oil Co. near St. Elmo, Ill.

OVEN DRILLING CO., Enid, Okla., is rigging up to drill No. 1 Allen, SE Section 26-24n-8w, Garfield County, Oklahoma, for Champlin Refining Co., which may determine a trend from the discovery well, No. 1 Boehm, in the Hillsdale district. This drilling organization is also drilling two other wells for Champlin in this area. No. 1 Mackey, NW NW SE Section 4-24-8w, northwestern Logan County, was drilling below 6,510 feet; this is a south offset to No. 1 Boehm. Various reports as to where No. 1 Boehm topped the Mis-

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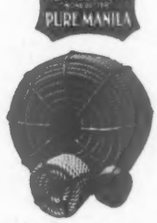

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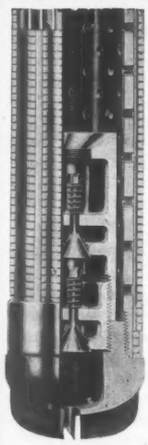

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sissippi make it difficult to tell whether No. 1 Mackey is higher or lower on the structure. No. 2 Boehm, NE SE NW Section 4-24n-8w, a northwest offset to No. 1 Boehm, is drilling below 5,359 feet.

HELMERICH & PAYNE, INC., Tulsa, in a partnership deal with Ohio Oil Co., has completed No. 2 Wilbur, NE NW NW Section 21-28-1w, as the fourth producer in the Southeast Braman pool, Kay County, Oklahoma. This well is producing from the Hominy sand at 3,640 to 3,647 feet. At first, 2½-inch tubing was set at 3,633 feet and the well flowed 52½ bbls. the first hour, 24½ bbls. the second hour, and 25½ bbls. the third hour. Later it was flowed through the casing, making 60 bbls. per hour, with 463,000 feet of gas.

OLSON DRILLING CO., Tulsa, is drilling the following wells for the Olson Oil Co.: No. 1 Osage (No. 1 M. Soldani), in CNL NW NW of Section 24-26-4e, west of Burbank, in Osage County, Oklahoma, was running tubing. No. 2 Osage (No. 1 L. Soldani), in NE cor. of Section 23-26-4e, was drilling at 2,090 feet.

CRESCENT DRILLING CO., Shreveport, La., recovered 3,158 feet of saturated core from the Cromwell sand in No. 1 Neese, NE NW Section 24-9n-10e, in the Wetumka region of northern Hughes County, Oklahoma. The well was drilled to 3,144 feet and cored to 3,158 feet. The test is being drilled on a farm-out from Stanolind Oil & Gas Co. and Amerada Petroleum Corp. The Crescent organization has been formed by officials of Melchy & Lasky, drilling contractors and producers of Shreveport, La.

ALLEN & MORRIS received contract from Shield Oil Co. for a second test on the Sasse lease in the La Rosa field, Refugio County, Texas, where four other operations are reported, three of which are for Geophysical Service, Inc., and one for Phillips Petroleum Co.

TRINITY DRILLERS, Inc., abandoned two interesting wildcats in Southwest Texas the past week. L. A. Douglas No. 1 Smith, north of the Luby field, Nueces County, was quit at 6,512 feet while Chapman Minerals Corp. and others No. 1 Bennett was abandoned at 6,210 feet. In the Clara Driscoll field, Nueces County, O. W. Killam No. 1 Myers was completed through perforated casing at 5,677-84 feet for an excellent producer, and is expected to revive drilling activity in the field as the well is on the down throw side of a fault in an area which was thought to be condemned. Three other active operations are reported in the Cordelle field, Jackson County, for Lewis Production Co., one at the Premont field, Jim Wells County, for Transwestern Oil Co. and one at the Driscoll field, Duval County, for Continental Oil Co.

O. W. DYER has moved two rotaries to the McCampbell field in Aransas County, Texas, for Atlantic Refining Co. Drilling in this field has been revived as a result of two recent extensions to the field which has extended production within a short distance of the Aransas Pass city limits.

RUTHERFORD DRILLING CO. has cemented casing on its joint test with Barnsdall Oil Co. about 3 miles north of the La Rosa field in Refugio County, Texas. The well was drilled to below 6,500 feet, and 5½-inch casing was cemented to test several showings above the total depth.

LOFFLAND BROTHERS received contract from Pan American Production Co. for a semi-wildcat test to be drilled in the Mestena field, Hidalgo County, Texas. The well is on the Josefa Cardenas lease in the Las Mestenas grant. In Nueces County and on the Mustang Island prospect, Texas Co. No. 1 Little was abandoned below 7,700 feet.

GEORGE ECHOLS is recompleting his No. 1 Security Investment Co. located a half mile west of the discovery well of the League City field, Galveston County, Texas. The well failed to produce in the discovery horizon and the hole has been plugged to test another sand at 8,900 feet. East of the discovery well about a half mile, No. 1 Maco Stewart is drilling below 5,000 feet.

HARRY L. EDWARDS DRILLING CO. is preparing to test a deeper sand in the League City field, Galveston County, Texas, which was logged in Midstates Oil Co. No. 1-A Maco Stewart, an east offset to the discovery well. The hole is bottomed in sandy shale at 9,310 feet and 7-inch casing was cemented on bottom. Sand showing oil was cored at 9,250-54 feet, and porous sand with a good odor was logged at 9,294-9,304 feet. Should the well fail to produce from this sand the hole will be plugged back and a test made in the discovery horizon below 9,100 feet.

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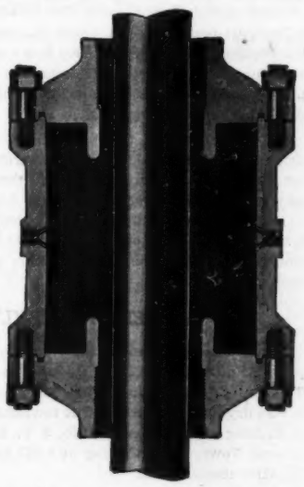

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Eastern Field Report

By STAFF CORRESPONDENT

250-Bbl. Well in Pleasants County, W. Va., Is a Feature

PITTSBURGH, Pa., Dec. 19.—The feature well of the week in the Pennsylvania Grade fields, and the largest oil well West Virginia has shown in many months, is B. C. Deem, Jr., and others (G. S. M. Powell Farm Oil Co. No. 2) on the D. P. Carter farm, on Bull Creek, in the Jefferson district, Pleasants County. It was drilled into the Squaw sand at 1,950 feet and produced 250 bbls. a day naturally. The well is three-quarters of a mile north and a little west of settled production from the same sand on the Samuel Hammett heirs farm.

An interesting deep test is starting in Jackson County, West Virginia, where Joe Rubin, Norwood P. Johnston and others are moving material onto the D. P. Curry farm in the Ravenswood district. The location is on the Ripley Quadrangle, about 2 miles west of Lockhart, in latitude 38 degrees 58 minutes 4 seconds, longitude 81 degrees 38 minutes 45 seconds, and on Coon Run about 500 feet up from the end of the unimproved road.

This test was located after seismograph studies and is on a high in the Parkersburg syncline. It is of interest because of the showing in a well at Ravenswood, about 6 miles west on the W. J. Brown farm which had a gauge of 400,000 feet a day after a shot in the Oriskany sand. Southwest of the new location there was a showing of gas in that formation in a well on the D. O. Curry farm which was abandoned after several strings of tools were lost in a 5-inch hole.

In Pennsylvania, the rotary test of the Peoples Natural Gas Co. on the Piedmont Coal Co. tract on Chestnut Ridge in South Union Township, Fayette County, was drilled through the Oriskany sand to a total depth of 6,825 feet and shut down. The Oriskany sand was at 6,709-6,804 feet. It is now being cleaned out and shows, incomplete, a gauge of 2,000,000 feet a day. It is believed that the mud has sealed off some of the gas pays, as a prior gauge from the Onondaga tested 5,000,000 feet a day. The hole is being washed out.

In Perry County, Southeast Ohio, the Atha Oil Co. drilled a test on the J. A. Wilkins farm in the NW quarter Section 17, Madison Township, through the Clinton sand to 3,170 feet and it was a dry hole.

In Harrison County, Ohio, the deep test of the Columbian Carbon Co. on the George D. Miller farm, Section 23, German Township, is drilling at 1,700 feet after casing to 1,475 feet.

SOUTHWEST PENNSYLVANIA

In Southwest Pennsylvania, one operation was completed, Equitable Gas Co. T. J. Ross No. 1 in Washington Township, Greene County, deepened to 3,283 feet where it was dry and plugged. In this township, same company is drilling at 2,155 feet in No. 3 T. J. Human, and in Greene Township is drilling at 1,862 feet on the George W. Hixenbaugh farm.

In Center Township, Greene County, Carnegie Natural Gas Co. in No. 4 J. H. Orndoff has recovered lost tools and resumed drilling.

In Wayne Township, Greene County, J. A. Cummins and others are deepening No. 1 W. E. Kerns at 2,325 feet. In Aleppo Township, the Manufacturers Light & Heat Co. is at 3,365 feet, in Gordon sand, deepening No. 1 C. J. Behm and is testing the gas from that formation, and may drill deeper.

In Morris Township, Greene County, C. H. McVay has a location on the Elmas Laughman farm in the old Dunn Station gas field. In Monongahela Township, Brummage & Brummage are ready to start the test on the S. G. Durr farm.

Washington County

In North Strabane Township, Keystone Drilling Co. has reached 1,700 feet on the Frank Grego farm. In Amwell Township, the Equitable Gas Co. is drilling at 894 feet on the Porter E. Herrod farm with a stray sand at 877-894 feet and a showing of gas at 893 feet.

In Hanover Township, Washington County, R. M. Duden and others started drilling on the Roy Scarum farm to test the Bradford sand.

In Chartiers Township, Cannonsburg Steel Co. was drilling at 1,510 feet in the second test on its fee. In Hopewell Township, McFadden & Co. have rigged up on the J. W. Reed farm. In North Fayette Township, Allegheny County, Young Brothers are rigging up on the James Sturgeon farm.

Deep Tests

On Chestnut Ridge in North Union Township, Fayette County, Wasson & Co. have resumed drilling on the J. H. Sorg farm, in the Marcellus at 6,731 feet. In South Union Township, New Penn Development Co., William E. Snee and others have reached 6,431 feet on the Indian Creek Coal & Coke Co. tract, or 193 feet below the top of the Tully lime.

In Springhill Township, Fayette County, on Chestnut Ridge, L. J. Houze Convex Glass Co. is cleaning out on top of lost tools in the test on the Paul Dunham farm. There is about 125 feet of caving on top of the tools. Total depth is 7,610 feet.

In Beaver County, Hanley & Bird reached 2,030 feet in the deep test on the S. Calvin farm in South Beaver Township and are shut down for engine repairs.

In Mercer County, Carnegie Natural Gas Co. is drilling at 4,345 feet on the A. S. McCullough farm in Jefferson Township or 544 feet below the bottom of the Oriskany sand.

WEST VIRGINIA

In Calhoun County, O. K. and M. C. Rogers completed No. 4 D. M. Miller in Sheridan district, in Squaw sand at a depth of 2,245 feet and it is showing 5 bbls. a day.

Gas Wells

In Cabell County, R. H. Adkins completed a gas well on the E. J. Lucas farm in Grant district at 2,194 feet. The Big lime was at 1,395-1,570 feet, Big Injun 1,615-92 feet, Berea 2,144-68 feet with gas gauging 220,000 cu. ft. a day 48 hours after shot.

In Gilmer County, McCall Drilling Co. completed a small gasser on the J. H. Houghton farm in DeKalb district at 1,953 feet. Big Injun sand was at 1,825-99 feet.

In Lincoln County, R. H. Adkins test on the Alfred Lovejoy farm in Jefferson district was completed at 3,611 feet as a gas well. Brown shale lay at 3,290-3,611 feet, with gas at 3,290-3,495 feet, gauging 500,000 cu. ft. a day 30 hours after shot.

In Wood County, Hunt Oil Co. drilled a dry hole on the R. B. Hunt farm in Union district through the second Cow Run sand to 1,275 feet.

In Marshall County, Manufacturers Light & Heat Co. old No. 2 on the J. N. and I. B. Pyles farm in Liberty district, which is a gas well in the Fourth sand at 3,061 feet, is now beginning to make oil along with the gas.

Oriskany Gas Field

Four gas wells were completed in the Oriskany gas field in Kanawha County. In Poca district United Fuel Gas Co. completed No. 4,811 on the S. E. Gibson land at 5,046 feet with Oriskany sand topped at 5,027 feet and a final gauge of 13,789,000 cu. ft. a day.

In this district Meigs Development Co. is completing a well on the Lula and Homer fields farm with the Oriskany topped at 4,961 feet and 942,000 cu. ft. a day showing at a depth of 5,009 feet.

In Elk district, United Carbon Co. completed a well on the Van Canterbury lease at 5,145 feet. The Corniferous lime was at 4,965 feet and Oriskany at 5,087 feet, and a gauge of 3,048,000 cu. ft. a day. In this district Columbian Carbon Co. has a small well, No. 2 Ida M. Hughart, at a total depth of 5,152 feet. It gauges only 189,000 cu. ft. a day.

In Poca district, Columbian Carbon Co. made a location on the L. M. Fields and others lease, elevation 843 feet. In the northern extension of the field in Ripley district, Jackson County, Everett Starcher and others who recently completed a fair gas well on the Story Boggess farm, 2 miles beyond production, has made two locations. East of the new well one was made on the Grady F. Boggess farm, elevation 887.78 feet and northeast of it on the R. R. Boggess farm, elevation 657.19 feet.

In Poca district, United Fuel Gas Co. is drilling at 4,852 feet No. 4796 W. J. Glass; at 1,243 feet in No. 4768 John Wines; at 3,654 feet in No. 4794 B. B. Milam; at 2,610 feet in No. 4795 Nancy Carney and others; at 2,145 feet in No. 4807 C. O. Slater and others; at 980 feet in No. 4812 J. A. Wines and others; at 1,485 feet in No. 4815 Mamie A. Ray; at 3,887 feet in No. 4816 M. L. Miller and others; at 1,545 feet in No. 4818 W. H. Fisher; at 340 feet in No. 4823 G. C. Patterson and others; with a rig for the 4817 W. M. Vance and material on the ground for No. 4822 W. F. Beanne.

The Mullins Gas Co. is drilling at 5,028 feet on the Mullins & Odell test in Poca district and at 1,590 feet in the William E. Fisher test. Godfrey L. Cabot, Inc., is drilling at 1,506 feet on the Putnam Co. land, and has a rig standing on the Helen M. Hoge farm. Spartan Gas Co. has reached 1,835 feet in the Ernest Fisher and others test; Glenn Oil & Gas Co. at 5,028 feet on the Mary Beaver farm; West Virginia Gas Co. at 2,254 feet on the J. H. Burdette and others land; United Carbon Co. at 3,060 feet in the J. H. Burdette test and at 4,842 feet on the William Moss and others land.

In Elk district, Columbian Carbon Co. topped Oriskany sand at 4,899 feet on the Bratton Hanna farm and is drilling 4,932 feet, and is starting to drill on the M. N. Landers and others farm.

Outside Deep Tests

In Washington district, Jackson County, Godfrey L. Cabot, Inc., is drilling at 2,400 feet on the Walker and Jones lease. In Harris district, Wood County, the New Penn Development Co. (Potter Development Co.) is drilling at 5,460 feet, deepening, on the W. H. Orem farm. In Grant district, Pleasants County, the Columbian Carbon Co. is drilling at 4,651 feet on the Giles Hammett farm.

New Work

In Barbour County, Hope Natural Gas Co. is drilling at 3,600 feet on the Annette Riley farm in Elk district. In Braxton County, Pittsburgh & West Virginia Gas Co. has reached 1,580 feet in No. 7661, A. M. Mollahan farm, in Birch district. In Clay County, same company is drilling at 2,013 feet in No. 7660 W. H. Smith and others land and at 1,564 feet in No. 7662 Ed L. Boggs and at 1,814 feet in No. 7663 Ed L. Hyre.

In Calhoun County Richards & Connolly have reached 1,000 feet on the Amos Sturm farm, Sherman district. Here Ivy Gainer and others were drilling at 890 feet on the Stump Heirs land. In Lee district, Everett Starcher had reached 900 feet on the Clay Starcher farm and was fishing at 675 feet in the Anna Slider second test.

In Roane County, Hope Natural Gas Co. was drilling at 2,050 feet in the Clark Wright test in Reedy district. Guy Boggess and others are down 1,600 feet in the William Boggess test. In Harper district, R. W. Heasley has part material for the Joseph Fields test. O. H. Reed and others are fishing at 1,050 feet in No. 4 P. V. Litton.

In Gilmer County, Massey & Jarvis have a rig up

(Continued on Page 76)

Kansas Developments

By
DAL DALRYMPLE

Ellis Wildcat Finds Deep Pay; Extend Schroeder, Keighley

Ellis County, which, perhaps, has been penalized as much or more than any other major oil producing county by the recession in field activity during 1938, scored the past week with the opening of a new Arbuckle lime pool. The Cities Service Oil Co. No. 1 Hall, C NW Section 2-12-17w, topped Arbuckle lime at 3,563 feet, was bottomed at 3,602 feet and set 5-inch casing at 3,593 feet. Oil rose 500 feet in the hole in one-half hour when it was drilled in. The wildcat is located 12 miles northeast of Hays in northern Ellis County. It is 1½ miles southeast of the Bemis field and 1½ miles east of the Shutts pool.

The Schroeder pool in southern Ellsworth County was extended one-half mile northwestward at Cities Service Oil Co. No. 1 Wessler, NE NE SE Section 19-17-9w. It made initial potential of 1,427 bbls. of oil daily from Arbuckle lime at total depth of 3,236 feet.

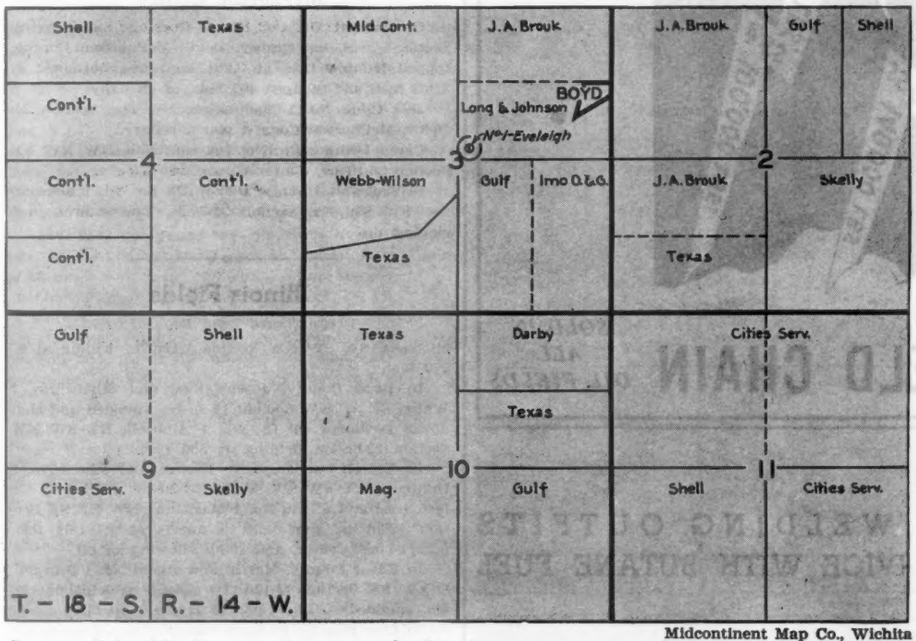
Rex & Morris No. 1 Sutter, NE NE SE Section 7-28-7, extended the Keighley area in Butler County one-fourth mile southwestward. It was reported showing 35 bbls. of oil daily on swab test from Bartlesville sand at 2,650 feet, following a shot.

Duwe & Farris and Bunte Brothers No. 1 Kimminau, NE NW SW Section 12-30-9w, wildcat about 19 miles southeast of the Cunningham pool in Kingman County, attracted interest the past week when it was reported to have found stainings of oil and some gas. Top of Mississippi lime was found at 4,255 feet and Viola lime was topped at 4,576 feet. Operators cored from 4,579 feet to 4,595 feet, total depth, and a subsequent Schlumberger test indicated gas saturation and some oil saturation. Seven-inch casing was to be set on top of Viola lime and it was thought probable the well would be completed as a gasser. Location is on a Shell Petroleum Corp. core-drilled block farmed out to Bunte Brothers. The test was supported by the National and Cities Service companies.

Web-Son Oil Co., Long, Johnson and others No. 1 Eveleigh, SW SW NE Section 3-18-14w, wildcat discovery well west of Hoisington in Barton County, had 2,000 feet of oil in the hole showing through cavings. Arbuckle lime was topped at 3,338 feet, total depth 3,367 feet. The crew was underreaming casing.

Leasing activity continues unabated in the Kansas sector of the Forest City basin. Kessler Oil & Gas Co. of Oklahoma City has filed for record a block of 1,400 acres in Doniphan and Atchison counties. Numerous other operators are reported leasing in the northeastern Kansas district.

The C. C. Whittaker No. 1 Anderson, NW SE SE Section 5-28-11, Greenwood County, recently reported abandoned at 550 feet, and same operator's No. 1 Pottorrf, SW SW NW Section 26-28-11, reported as an abandoned rig, are merely shut down and operations will be resumed at both locations early in 1939. Mr. Whittaker, who has headquarters in Denver, Colo., reports he has sold the wells, together with acreage in Greenwood, Elk, Crawford and Phillips counties to the Blue Stem Oil Co., a Colorado corporation, of which he will be general manager. That company plans to drill several tests in the four counties during the next year, he reported.



Midcontinent Map Co., Wichita

A new Arbuckle lime pool apparently has been opened west of Hoisington in Barton County at Web-Son Oil Co., Long, Johnson and others No. 1 Eveleigh, Section 3-18-14w

Wildcat Developments

Three discovery wells previously designated as pool openers were transferred to the completion list the past week.

A. G. Kaiser, Newton & Pulse and others No. 1 Hagen, SW cor. Section 20-20-11w, opened a producing area about 4 miles south of Ellinwood in Barton County. It found top of Arbuckle lime at 3,323 feet, was bottomed at 3,330 feet, and made potential of 669 bbls. of oil. It pumped 200 bbls. of oil in the first six hours. Location is on a Stanolind Oil & Gas Co. farmout, about 2 miles from nearest production in the Ellinwood pool.

Sinclair Prairie Oil Co. No. 1 Prusa, SE cor. Section 20-16-11w, a communitized project in northeastern Barton County, made potential of 1,313 bbls. of oil from Arbuckle lime topped at 3,335 feet, total depth 3,352 feet. It is 3 miles south of the Davidson pool and about 3½ miles northwest of the Kraft pool. The Shell, Cities Service and Continental companies are interested in the project.

Bunte Brothers and Jock Garden No. 1 Shepherd, SE cor. Section 10-27-10w, was classed as a pool opener in Kingman County early in November but was not listed as a completion until the past week. Top of Tonganoxie sand was found at 3,500 feet and it produced 50 bbls. of oil daily from that horizon. However, it was drilled to 4,529 feet, total depth, in dry Arbuckle lime, and was plugged back to 4,086 feet. Location is about 4 miles northeast of the Cunningham pool.

Garden Production Co. No. 1 Werner, NE cor. Section 10-21-9w, Rice County wildcat, was dry and abandoned at 3,443 feet, total depth.

Frank Hollow No. 1 Hohl, CWL NW NE Section 3-18-10w, wildcat east of the Stumps area in northwestern Rice County, was building rig.

R. H. Shields No. 1-A Gross, C S half SW SE Section 5-15-13w, wildcat in southwestern Russell County, was a rig.

Cramm & Sackrider No. 1 Allen, SE NE SE Section 13-21-15, was a wildcat location northeast of Burlington in Coffey County. Machine was being rigged up.

Bowland & McCoy No. 1 Frankson, SE SE SW Section 2-29-6, an old Butler County wildcat that stopped at 100 feet, was being rigged up to deepen.

Estimated Daily Production

Estimated daily production for Kansas for the week ending December 17, and for the preceding week, was as follows:

	Barrels	
	Dec. 17	Dec. 10
Oxford City	1,050	1,075
Burrton	8,875	8,775
Ritz-Canton	4,125	4,025
Graber	3,400	2,300
Hollow-Nikkel	1,575	1,600
Lerado	800	725
Voshell	1,950	2,025
Wellington	2,200	2,125
Ellsworth County:		
Lorraine	2,000	1,975
Other pools	1,565	1,295
Rice-Barton counties:		
Bloomer	2,250	1,275
Chase	4,650	4,400
Geneseo	3,325	3,050
Raymond	825	900
Silica	10,075	9,100
South Silica	2,075	1,325
Keesling	800	775
Wherry	3,850	3,900
Miscellaneous Barton	6,395	6,985
Miscellaneous Rice	5,120	4,855
Russell County	21,925	20,975
Sedgwick County	4,150	3,905
Ellis County:		
Bemis	4,700	4,780
Miscellaneous	2,735	2,645
Kingman County	655	655
Stafford County	5,285	4,535
Greenwood County	8,750	8,825
Butler County	19,875	19,475
Other fields	18,545	19,520
Total Kansas	153,525	147,800

Cowley County

Largest Kansas producer of the past week and one of the large producers of the year was completed in the Hittle pool, Cowley County, at McKnab & Blair No. 2-A Hittle, NW SE NE Section 21-31-4e. It topped Arbuckle lime at 3,307 feet, total depth 3,315 feet, and flowed and pumped 4,238 bbls. of oil daily.

Earl Wakefield No. 2 David, SW NW SE Section 2-31-4, South David area, was dry and abandoned at 2,996 feet, total depth.

Roth Oil & Gas Co. No. 2 Sherwood, SW cor. Section 11-31-4, had Bartlesville sand and shale at 2,963

feet, total depth 2,982 feet, and pumped 15 bbls. of oil in 24 hours.

Arthur Brewer No. 3 City of Winfield, NW NE SW Section 15-30-4, Rock area, was dry and abandoned at 2,791 feet, total depth.

Stafford County

E. H. Moore, Inc., No. 2 Johnson, SW SW SE Section 13-24-11w, one of three completions of the past week in the Zenith field, Stafford County, found top of Misener sand at 3,797 feet, total depth 3,816 feet, and produced 304 bbls. of oil initially. Potential was adjusted to 464 bbls. after bottom-hole pressure computation.

Sinclair Prairie Oil Co. No. 6 Krey, NW SW NE Section 14-24-11w, was completed for adjusted initial potential of 1,492 bbls. of oil daily. Misener sand was topped at 3,793 feet, total depth 3,808 feet. Original potential was 745 bbls. of oil daily.

Stanolind Oil & Gas Co. No. 4 Hartnett, SW NW SE Section 23-24-11w, topped Misener sand at 3,802 feet, was bottomed at 3,813 feet, and made initial potential of 620 bbls. of oil daily. This was adjusted to 1,107 bbls.

Barton County

Stanolind Oil & Gas Co. No. 14 Panning, CWL NW NE SE Section 3-20-11w, Silica field, Barton County, pumped 188 bbls. of oil and 37 bbls. of water initially and was completed at 3,313 feet, total depth. Top of Arbuckle lime was 3,291 feet.

Gulf Oil Corp. No. 4 Spanier, NW NE NW Section 12-20-11w, made initial daily potential of 2,994 bbls. of oil, with 138 bbls. of water. Arbuckle lime was topped at 3,266 feet, total depth 3,277 feet.

Hilligoss No. 6 Isern B, NW NW NE Section 12-20-11w, was completed for initial potential of 253 bbls. of oil from Arbuckle lime topped at 3,267 feet, total depth 3,284 feet.

Shell Petroleum Corp. No. 1 Schneider E, NE SE NW Section 2-16-14w, Trapp field, was drilling below 390 feet.

Rice County

Continental Oil Co. No. 3 Gum, NW NW SE Section 34-19-10w, Silica field, Rice County, penetrated Arbuckle lime at 3,310 feet, was bottomed at 3,315 feet and made potential of 565 bbls. of oil.

Same company's No. 4 Pickerill, NW NW SE Section 13-18-8w, Geneseo district, made initial potential of 2,347 bbls. of oil and was completed. It found top of Arbuckle lime at 3,210 feet, total depth 3,214 feet.

New operations in Rice County: Shell Petroleum Corp. No. 2 Cramm A, NE cor. Section 15-19-9w, North Cramm area, rig; Sinclair Prairie Oil Co. No. 9 Wallace, NE NW SW Section 29-19-9w, Chase field, building rotary rig; J. H. Tatlock No. 10 Drews, NE SW SW Section 5-20-10w, Silica field, waiting on cement at 146 feet.

Russell County

Shell Petroleum Corp. No. 4 Dumler, NE SE SW Section 36-15-14w, Trapp field, Russell County, was acidized and made initial potential of 1,234 bbls. of oil daily. Production was from Arbuckle lime topped at 3,307 feet, total depth 3,324 feet.

Phillips Petroleum Co. No. 4 Wineteer, NW SW SE Section 19-13-14w, Atherton district, found Lansing-Kansas City lime at 2,992 feet, was bottomed at 3,018 feet, and pumped 247 bbls. of oil and 294 bbls. of water daily.

Three new operations were reported in Russell County: Texon Oil Co. No. 1 Lipprand, NW NE NW Section 35-14-13w, Letsch pool, building rig; Cities Service Oil Co. No. 1 Miller E, in the Vaughn pool, was building rig; same company's No. 1 Hennessey, SW SW SE Section 26-15-14w, West Trapp area, building rig.

McPherson County

Continental Oil Co. No. 9 Goering, SW NE SW Section 29-21-1w, Graber field, McPherson County, topped Hunton lime at 3,281 feet, was bottomed at 3,303 feet, and pumped 407 bbls. of oil daily.

Jess Cling No. 1 Magnusson, NW cor. Section 25-19-3w, McPherson County, was a cellar.

Carey Drilling Co. No. 1-A Helstrom, NW NW NE Section 35-19-3w, Johnson pool, was a cellar.

In Sedgwick County, Dickey Oil Co. No. 1 Schweitzer, SW SW NE Section 32-28-2e, Downs area, was rigging up.

Illinois Fields

(Continued from Page 67)

Michaels, SW SW NW Section 1-11n-7e, drilling at 1,570 feet.

In Bond County, Joseph Kesl and others No. 1 White, SE SE NW Section 17-5n-4w, spudded and shut down. Devonian Oil Co. No. 1 Ambrell, NE SW NW Section 22-6n-4w, drilling at 860 feet.

In Clinton County, A. C. Thomas and others No. 1 Holthaus, SW NW SW Section 21-2n-3w, drilling at 878 feet. Kesl and others No. 1 Marbaum, NW NE SE Section 12-3n-3w, shot with 5 quarts at 1,161-64 feet, pumped salt water, and small showing of oil.

In Edgar County, Martin and others No. 1 Sturgell, C NW NE Section 12-12n-11w second principal meridian, spudded.

In Clay County, Richard Duncan No. 1 Liggett, SE NW SE Section 17-5n-5e, was shut down at 1,945 feet.

In Coles County, Ed Swearer and Crown Petroleum Co. No. 1 Sanders, SE SE NW Section 27-13n-8e, total depth 2,105 feet, tools in the hole; shut down for orders.

In Cumberland County, National Consumers Oil Co. No. 1 Ward, NE SE NE Section 17-9n-9e, total depth 2,152 feet; plugged back to 2,138 feet; ran tubing; swabbed water, Jeffries & Cobb No. 1 Miller, C S half SE SE Section 29-10n-9e, drilling at 1,000 feet.

In Edwards County, Leach Brothers No. 1 A. D. Lee, SW NE SE Section 11-1s-10e, was drilling at 4,105 feet. There was a showing of oil and gas at 4,095-4,101 feet.

In Gallatin County, Bailey & Lucas No. 1 Logan, SW cor. SE NE NE Section 21-8s-8e, shut down at 1,612 feet.

In Jefferson County, Benedum & Trees No. 1 Interstate Coal Co., NE NE SW Section 9-4s-2e, drilling at 3,291 feet. Minerva Oil Co. No. 1 Warren, SE SE SE Section 18-1s-4e, drilling at 2,755 feet.

In Johnson County, Cato Elzie No. 1 Bonner, C SW NE Section 30-11s-3e, shut down at 650 feet.

In Marion County, Robert Garland No. 1 Voght, SE

(Continued on Page 86)

FACTORY REPRESENTATIVE GEO. J. FIX DALLAS, TEXAS

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Oklahoma Operations

By
DAL DALRYMPLE

Oil Rises 5,000 Feet in Hole at Cleveland County Outpost

Prospects for developing new production in the Noble area of Cleveland County, Oklahoma, were brightened considerably Monday when oil was reported to have risen 5,000 feet in the hole at Gulf Oil Corp. No. 1 Taylor, SE SE SW Section 1-7n-2w, after previously showing fresh water. The oil was thought to be coming from Chicken Farm sand.

After salt water intruded at 7,676 feet, total depth, the hole was plugged back to 6,955 feet and casing perforated at 6,880-6,909 feet. Fluid, consisting of fresh water with only a small amount of oil, rose to 4,760 feet from top of the hole. It was bailed dry, stood for 10 hours, and when operators ran the bailer, more fresh water with a scum of oil was recovered. Again it was bailed dry, shut in for a time, and the oil rose in the hole. Bailing and testing was in order. Operators had not determined the source of the fresh water. Location of this well is 1 mile north of the Noble pool discovery well.

Murray County has been added to the oil-producing areas in the state, a gas-discovery well recently having begun showing oil. The discovery well, Gilbreath & Dutton No. 1 Wolfe, SE SE SW Section 8-1n-2e, north of Davis, was reported to have produced 30 bbls. of oil in eight hours, with gas production pinched to 1,000,000 feet daily. The oil is high grade, almost distillate in quality. This wildcat opened the Davis gas pool last May, gauging 22,800,000 feet of gas daily. It found Wilcox sand dry at 2,408-2,521 feet, total depth, and was plugged back and casing perforated at 2,227-86 feet.

Two new operations are reported in the Ramsey pool, Payne County. Mid-Continent Petroleum Corp. and others No. 7 Ramsey, NW cor. Section 18-18-2e, is on the north side of the community block on which all producers in the field have been completed. Stanolind Oil & Gas Co. and others No. 1 Walters, SW SW NE Section 18-18-2e, is on the east side and outside the community block.

Among the Wildcats

Atlantic Refining Co. No. 1 Goss, NW NW SE Section 6-6-4, opened a Wilcox sand producing area in the south St. Louis-Avoca district, Pottawatomie County, where other production was from Viola lime. It found top of second Wilcox sand at 4,511 feet, total depth 4,518 feet and pumped 745 bbls. of oil in 24 hours, cutting 2 per cent water.

The Hughes County wildcat drilled by the city of Holdenville at No. 1 Fairgrounds, SE cor. Section 13-7-8, was temporarily abandoned at 1,200 feet, total depth.

Caloma Oil Corp. No. 1 Brentz, SE NE SW Section 4-1n-6, wildcat southwest of the Fitts field in Pontotoc County, has been idle for many weeks at a total depth of 1,707 feet and was reported temporarily abandoned.

Big Chief Drilling Co. and others No. 1 Stratigier, NW NW SW Section 25-9-2w, wildcat in Cleveland County, was dry and abandoned at 7,179 feet, total depth.

Conley Drilling Co. No. 1 Townsend, NE NE NW Section 7-6-4, wildcat south of the Avoca pool in Pottawatomie County, was building rig.

Stonewall Oil & Gas Co. No. 1 Meyers, SW NW SW Section 10-5-6, wildcat near the Seminole-Pontotoc County line, was a location.

Villines No. 1 Dees, NE NE NW Section 6-8-7, wildcat north of Lima, southeast of the Seminole pool and northeast of the Bowlegs area, was a rig.

M. A. Saunders No. 1 Vanderstice, C SW SW Section 25-2-2, Murray County wildcat, was a machine.

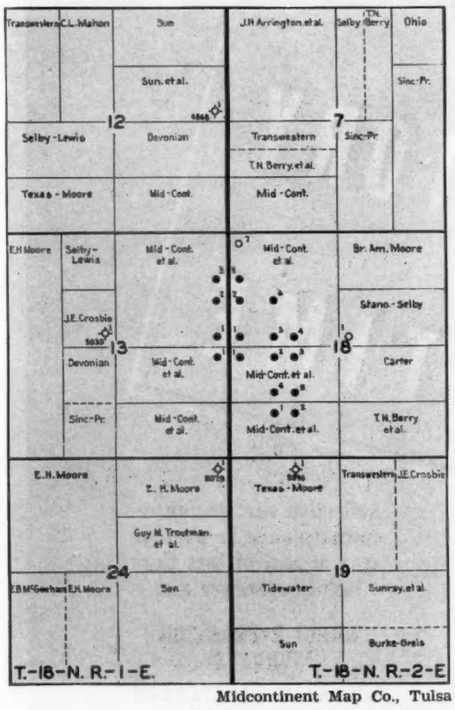
Bridwell Oil Co. No. 1-I Seay, SE NE SW Section 29-6s-5w, wildcat north of the Seay and Spring areas in Jefferson County, had spudded.

Pottawatomie County

F. W. Cooper No. 2 Green, SW SE NE Section 35-7-4, St. Louis field, Pottawatomie County, topped dolomite at 4,168 feet, total depth 4,181 feet, and pumped 60 bbls. of oil in 24 hours.

Vierson Oil & Gas Co. No. 1 Rhodd, NE NE SW Section 32-7-5, pumped 307 bbls. of oil and 35 bbls. of water in 24 hours from dolomite found at 4,030 feet, total depth 4,055 feet.

New operations in Pottawatomie County: J. E. Trigg No. 1 Rhodd A, SE cor. Section 32-7-5, rigging up rotary; Pioneer Drilling Co. No. 1 Green, NW NW SE Section 29-7-5, location; Westheimer and Gulf Oil Corp. No. 6 McGee, NE SW NE Section 23-7-4, drilling below



Midcontinent Map Co., Tulsa

Two new tests were starting in the Ramsey pool, Payne County. One, the Stanolind Oil & Gas Co. and others Walter, as indicated, being east of the community block on which 17 producers have been completed

1,140 feet; Ray Stephens No. 1 Ticet, NE SE SW Section 6-6-5, rigging up rotary.

Pontotoc County

Carey & Harden No. 2 Fleming, SE cor. Section 12-5-4, in the Bebee district, Pontotoc County, pumped 80 bbls. of oil in 24 hours from Viola lime topped at 2,570 feet and was completed at total depth of 2,625 feet.

C. L. Wingate No. 1 Grant, SW cor. Section 14-2n-7, Fitts district, was a location. Oil Royalty, Inc., No. 1 Norman & Fleming, SE cor. Section 7-5-5, Bebee area, was building rig. Superior Oil Co. No. 1 Norman, SW cor. Section 7-5-5, had dug cellar and pits.

Coal County

Continental Oil Co. completed a large producer in the Coal County sector of the Jesse pool at No. 2 Brown, SW NW SW Section 7-1n-8. It topped McLish formation at 4,609 feet, was bottomed at 4,648 feet, and flowed 2,836 bbls. of oil in 24 hours, accompanied by 1,600,000 feet of gas.

Franklin and others No. 1 Hudson, C E half NE NW Section 26-1n-8, Clarita area, was dry and abandoned at 800 feet.

S. J. Campbell No. 1 Wells, C N half SE SE Section 24-3n-11, in the Coal gas pool, had pay at 1,217-58 feet, total depth 1,363 feet, and produced 3,500,000 feet of gas daily.

Estimated Daily Production

Estimated daily production for Oklahoma for the week ending December 17, and for the preceding week, was as follows:

	Barrels	
	Dec. 17	Dec. 10
Allen	6,500	6,550
Billings	5,250	5,350
Burbank	7,225	7,425
South Burbank	9,200	9,150
Balance Osage	15,500	16,000
Blackwell district	4,000	4,025
Bristow-Slick	6,475	6,500
Chandler	1,925	1,950
Crescent	3,600	3,675
Cromwell	3,000	3,025
Cushing-Shamrock	10,250	10,325
Duncan district	4,400	4,350
Edmond	4,975	5,075
Fish	3,200	3,175
Fitts	35,425	32,450
Jesse	2,200	2,350
Graham-Fox	4,350	4,275
Gray	850	875
Healdton	9,350	9,325
Hewitt	3,625	3,600
Keokuk	3,875	3,950
Konawa	1,225	1,200
Lucien	8,050	8,025
Moore	4,550	4,525
Oklahoma City	106,500	91,800
Olympic	3,875	3,975
Ramsey	2,550	2,500
Sasakwa	1,275	1,300
Sholem-Alechem	2,350	2,325
Seminole district:		
Bowlegs	8,150	8,200
Carr City	3,150	3,175
Dora	4,550	4,625
Earlsboro	4,475	4,525
South Earlsboro	500	525
East Earlsboro	4,200	4,250
Little River	6,450	6,475
East Little River	825	825
Maud	550	575
Mission	1,325	1,350
Seminole	7,750	7,850
East Seminole	1,600	1,625
Searight	2,425	2,475
Total Seminole	45,950	46,475
St. Louis-Pearson	26,500	26,250
Tatums	2,075	1,925
Tonkawa-Garber-Thomas	4,100	4,125
Wewoka	2,225	2,250
Yale-Jennings	3.725	3,800
Other pools	82,250	82,000
Total Oklahoma	442,375	425,875

Seminole County

Grisso Royalty Co. No. 2 Vanders, SE NE SW Section 27-6-5, West Konawa area, Seminole County, was completed as a 5-bbl. pumper after plugging back from 2,735 feet, total depth, to 2,705 feet. Senora sand was topped at 2,692 feet.

J. Campbell No. 1 Jones, SW SW SE Section 27-6-5, was dry and abandoned at 2,776 feet, total depth.

Hall-Troup & Moore No. 1 Deavers, NW NE SE Section 27-6-5, was dry and abandoned at 2,880 feet, total depth.

Mid-Continent Petroleum Corp. No. 1 Tiger, NE SW SE Section 12-6-5, had dug cellar and pits. Deep Rock Oil Corp. No. 2 McCann, NE cor. Section 33-7-6, Little River area, had spudded. Superior Oil Co. No. 2 Tiger, SW SE SE Section 12-6-5, had dug cellar and pits.

Tulsa-Muskogee Counties

A. Peppis No. 1-A Mitter, CSL NE SW Section 35-19-12, Tulsa County, topped pay sand at 1,354 feet,

was bottomed at 1,362 feet, and pumped 8 bbls. of oil in the first 38 hours.

J. M. Foltz No. 8 Rowsey, NW NE SW Section 9-15-18, Muskogee County, was completed as a 4-bbl. pumper from pay at 960-82 feet, total depth.

J. R. Parks No. 5 Hilderbrand, NW NW SE Section 17-14-19, Muskogee County, was dry and abandoned at 615 feet, total depth.

Same operator's No. 4 McDaniel, CWL SE SE Section 17-14-19, was dry and abandoned at 749 feet, total depth.

New work in Muskogee County: Howard & Singer No. 1-A Mallony, SW SW NW Section 33-15-15, was drilling below 360 feet; Robert L. Hill No. 1 Atkins, C E half SE SE Section 17-15-18, drilling below 518 feet; Joe F. Hall No. 1 Lewis, SW NE SW Section 32-14-16, spudded.

Creek County

Bovaird & Irvine No. 1 Long, SE SW NW SW Section 9-18-7, Creek County, was completed for 7 bbls. of oil daily after plugging back from total depth of 2,515 feet to 2,475 feet, and shooting.

Walter Schofar No. 1-A Wiley, NE NE SE Section 9-17-7, was dry and abandoned at 2,398 feet, total depth.

Gled Oil Co. No. 1 Sellmeyer, NE NE NW Section 34-18-8, failed to find production and was abandoned at 2,843 feet.

Lincoln County

Mudge Oil Co. No. 2 Dowell, SW SE NW Section 10-14-6, Sac and Fox pool, Lincoln County, found Prue sand at 3,043 feet, total depth 3,097 feet, was shot and pumped 20 bbls. of oil in 24 hours.

Sinclair Prairie Oil Co. No. 6 Buckles A, NE NE SE Section 15-14-6, had Prue sand at 2,915 feet, was bottomed at 2,996 feet, shot and pumped 30 bbls. of oil in 24 hours.

Okmulgee County

Browning & Potter No. 1-A Kennedy, SW SE SW Section 10-13-13, Okmulgee County, topped pay in Bartlesville sand at 1,792 feet, total depth 1,807 feet, and pumped 18 bbls. of oil in 24 hours.

W. W. Wilson No. 3-A Mayfield, C NE NE Section 27-14-14, found Booch sand at 1,130 feet, was bottomed at 1,142 feet, and pumped 2 bbls. of oil in 24 hours.

New work in Okmulgee County: Holifield No. 1 Howard, SW NE NW Section 32-14-14, spudded; D. A. Armstrong No. 8 Anicker, NE SW NW Section 3-14-14, drilling below 780 feet; J. L. Selby Oil & Royalty Co. No. 9 Sutton, NW SW SE Section 33-14-14, drilling below 200 feet; Conrad Lambert No. 1-A Darby, C W half NE NW Section 29-15-14, rigging up machine; Price & Warner No. 5-A Warner, SE NW NE Section 21-14-14, moving in machine.

Oklahoma County

Davon Oil Co. No. 1 Glidden, SW SE Section 13-11-3w, Oklahoma City field, Oklahoma County, entered Hoover sand at 3,992 feet, total depth 4,031 feet, was shot with 40 quarts and completed for 105 bbls. of oil daily.

Kay County

Gus T. Little No. 1 Prunty, NE NE SW Section 33-28-3e, Mervine area, Kay County, produced 3,000,000 feet of gas daily and was completed at total depth of 319 feet.

Osage County

Stevenson-Rock No. 2-A Osage, SE NW SW Section 27-28-10, Osage County, was dry and abandoned at 1,418 feet, total depth.

Indian Territory Illuminating Oil Co. No. 459 Osage, SE SE NE Section 25-25-10, was dry and abandoned at 1,908 feet, total depth.

Norbla Oil Co. and others No. 3 Osage, NW SE NE Section 3-26-11, failed to find production and was abandoned at 1,690 feet, total depth.

Four new operations in Osage County were reported: Indian Territory Illuminating Oil Co. No. 462 Osage, NW SW SE Section 9-26-11, was a location; Peters and Sinclair Prairie Oil Co. No. 23 Osage, SE NW NE Section 24-24-7, location; Olson Drilling Co. No. 1 Osage, SE cor. Section 14-26-4, location; same company's No. 1 Osage, NE cor. Section 23-26-4, shut down at 536 feet.

Southwestern Oklahoma

Indian Territory Illuminating Oil Co. No. 4 Graham, NW NW NE Section 1-3s-19w, Frederick pool, Tillman County, topped lime pay at 3,106 feet, total depth 3,113 feet, and swabbed and flowed 97 bbls. of oil in 15 hours.

O. P. Burnham No. 3 Sumner, SE NE SE Section 6-1s-19w, Tipton pool, Jackson County, pumped 77 bbls. of oil in 24 hours from granite wash topped at 2,447 feet, total depth 2,600 feet.

J. G. Beard No. 8 Willis, C W half SE SW Section 23-2s-6w, Stephens County, pumped 3 bbls. of oil daily from sand topped at 1,723 feet and was completed at 1,760 feet, total depth.

First reports of new operations: J. G. Beard No. 9 Willis, NE NE NW Section 26-2s-6w, Woolsey pool, Stephens County, drilling below 1,640 feet; Ohio Oil Co. No. 11 Wade, SE SW SE Section 2-5-9w, Cement field, Caddo County, derrick; R. O. Ray No. 1 Ellis, NW SW NW Section 5-1s-19w, Tipton pool, Jackson County, drilling below 783 feet; O. P. Burnham No. 1 Burrow, NE SE NW Section 6-1s-19w, Jackson County, pits; Mathews & Thorp No. 1 James, SW SW NW Section 2-1n-20w, Altus pool, Jackson County, location; Ripps & Ungerman No. 7 Pumeston, SW NE SW Section 16-7s-5w, Oscar-Seay area, Jefferson County, drilling below 610 feet; H. C. McGlothlin No. 2 Little, SW SW NW Section 30-7s-6, Enos pool, Marshall County, machine.

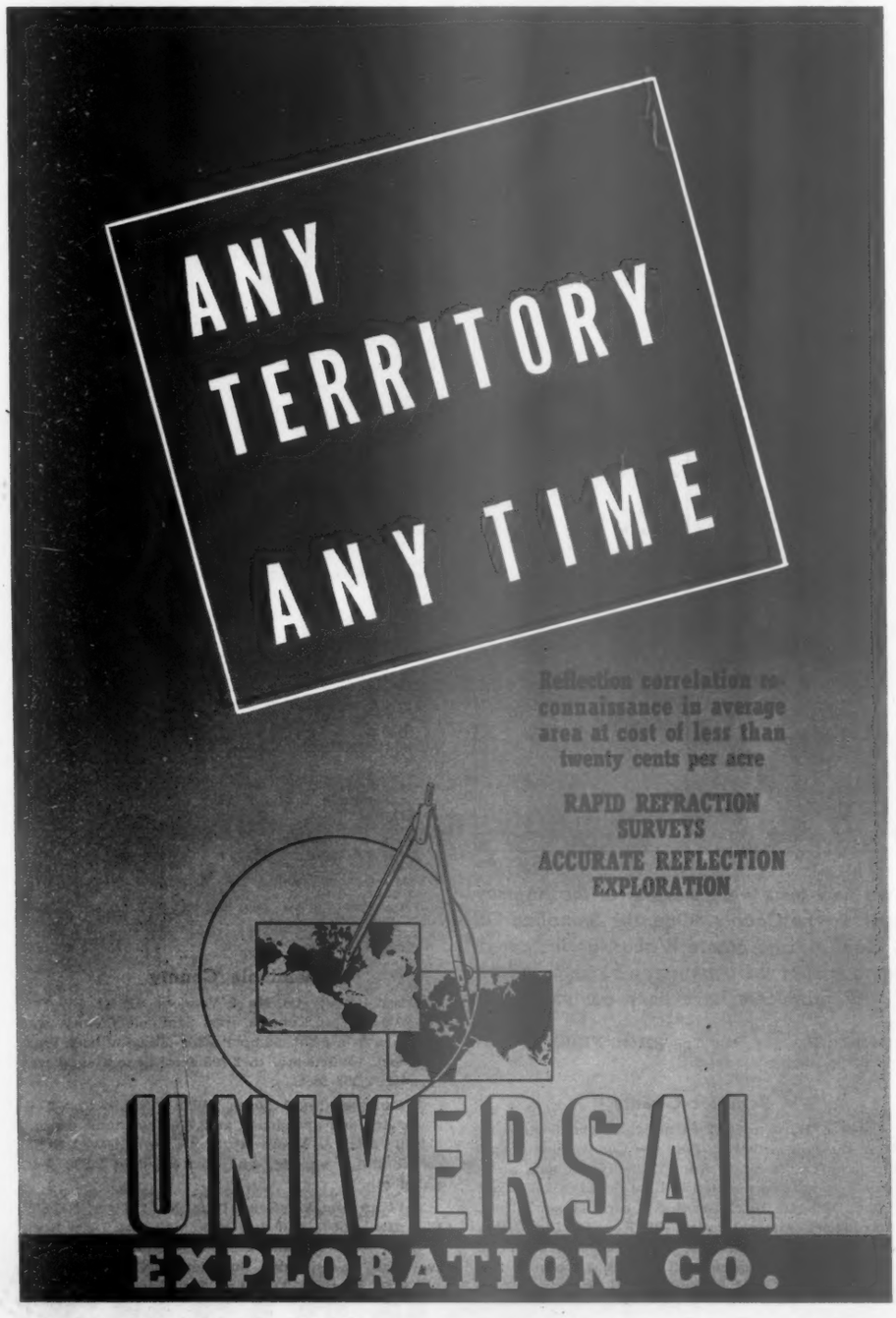
Eastern Fields

(Continued from Page 72)

on the Milton Norris Heirs farm. McKnight & Whiting are rigging up the A. B. and J. D. Vannoy test. W. H. Mossor and others are building rig for the S. S. Riddle test. J. A. Tierney is building a rig on the G. Hart farm. All are in DeKalb district.

In Marion County, Clifton Oil & Gas Co. is drilling at 3,485 feet on the Isaac Campbell Heirs farm, Mannington district, and R. S. Monroe has reached 2,840 feet in the Ethel Watson test. In Monongalia County, Cummins & Phillips have reached 1,825 feet in the Robert Cumberledge test in Battelle district.

In Lincoln County, Sweetland Land & Mining Co. is drilling at 380 feet in the Chelcy McCallister test in Sheridan district. In Union district, Woodall Gas Co. is moving in material on the James P. Plumley farm.



California Field Report

By
L. P. STOCKMAN

Deeper Drilling May Better Lovelady's Deep Zone Yield

LOS ANGELES, Calif., Dec. 19.—De Soto Oil Co.'s deep productive zone in the Lovelady section of the Long Beach field of Los Angeles Basin may not prove of great importance. The discovery well did not have sufficient gas to result in a natural flow and was put on a compressor. It is flowing 350 bbls. of 28.9-gravity oil per day from 396 feet of zone between 9,761 feet and 10,157 feet.

If the well fails to hold up the hole will be deepened another 200 feet, as the lower part of the hole showed up much better than the upper part of the zone. It is the deepest hole drilled in Long Beach.

The relatively small initial production has had a tendency to discourage deeper drilling in view of the many ownerships and small-sized leases near the well. None of the larger companies will do any deep drilling at present.

Wilmington

Production of the Wilmington field which has exceeded the prescribed allowable for several months is expected to be reduced to around 70,000 bbls. per day within another week. Drilling operations have been reduced to the lowest point yet reached and thus the reduction will simply be a matter of regulating the production of leases and wells free from any complicating factors. The Wilmington field is not entirely drilled up although practically all of the required offset work has been finished. Signal Oil Co. has not yet completed details with respect to tideland development, but drilling operations should show a temporary gain when this work gets under way early in the new year. General Petroleum Corp. has secured the right to drill on a 12-acre parcel leased from Southern Pacific Railroad Co. when Superior Judge Emmet Wilson handed down a decision in favor of the company and against the city of Long Beach. At the request of the company, Judge Wilson issued a writ of mandate compelling the Long Beach Harbor Commission to grant permits for three wells to be drilled on the parcel located at the foot of Seventh Street between ship channels 2 and 3 in the Long Beach Harbor section of the field.

Only one well was finished in the Wilmington field in the past week and since it was allowed to produce only from the upper Terminal zone under restraint, production was relatively small. The new completion was General Petroleum Corp. No. 31 Harbor Community which was brought in flowing 341 bbls. of 20.4-gravity oil cutting 5 per cent through a 20/64-inch bean from 3,850 feet. In accordance with the procedure now followed by operators as a conservation measure only one zone is produced, although new wells are being completed with the usual provisions necessary to produce all zones simultaneously.

Torrance-Harbor City

In the Lomita section of the Torrance field, principal interest is centering around 235th Street and Eshelman Street, and extends as far south as 238th Street. Four new wells were completed in this section during the past week and several additional wells are scheduled for completion within a few days. These new wells, while not as large as some of those in the western part of the Lomita section of the Torrance field, are being completed with larger initials than wells located 3,000 feet to the east in the Narbonne area. Several of these wells have set casing and perforated at about the same depth as wells on the Marble lease of Standard Oil Co. This may be due to the fact that new stringers of oil sand are being found in the top of the Del Amo zone as each succeeding well is drilled to the east. These stringers become lower and better saturated to the east thus indicating a possible extension of the productive area.

The four wells completed are A. & T. Oil Co. No. 2 fee, flowing 225 bbls. of 26.7-gravity oil per day; Alford Oil Co. No. 11 Lomita, pumping 148 bbls. of 25.9-gravity oil daily; Plymouth Oil Co. No. 1 Lomita, completed pumping 197 bbls. of clean 26.8-gravity oil per day, and Felix Mallon No. 2 Mallon, finished flowing 186 bbls. of 26.4-gravity oil daily. Production of all four wells was relatively clean, the highest water and sand cut averaging 3 per cent. A. & T. Oil Co. No. 2 fee was finished at 5,144 feet. Alford Oil Co. No. 1 Lomita was bottomed at 5,192 feet. Plymouth Oil Co. No. 1 Lomita was finished at 5,125 feet, and Felix Mallon No. 2 was bottomed at 5,136 feet.

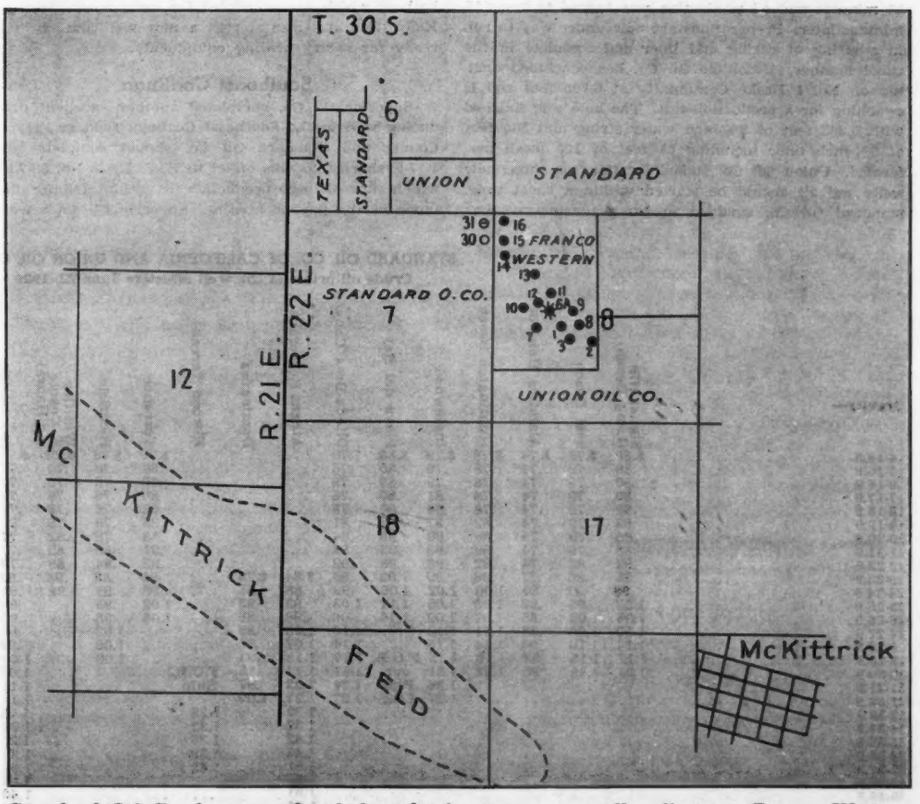
Other Completions

Standard Oil Co. completed two wells on the Marble property although one of the wells was a recompletion. This well was No. 1-1 Marble recompleted pumping 180 bbls. of clean 25.4-gravity oil per day from 4,986 feet after the hole had been finished with 281 feet of 5½-inch liner including 236 feet of perforated landed at 4,977 feet. Standard No. 2-11 Marble was a new well, completed flowing 251 bbls. of clean 25.6-gravity oil daily from 4,970 feet. In the Harbor City area, located south of the Lomita section of the Torrance field, General Petroleum Corp. completed No. 12 Poggi flowing 230 bbls. of 28.7-gravity oil cutting 3 per cent daily from 5,200 feet. D. & B. Oil Co., after failing to find production in the conglomerate on top of the schist basement in No. 2 Dawn diverted its attention to No. 2 Harbor and finished this new well flowing 171 bbls. of clean 29.4-gravity oil daily from 5,244 feet.

Montebello

The western extension of the Montebello field of Los Angeles Basin which up to the present has failed to become a factor of primary importance due to limited production possibilities of the fifth zone and upper part of the sixth horizon is showing renewed life as a result of larger production found in the lower part of the sixth zone. No well located near the axis of the structure has been carried below the fourth finger of the sixth zone and therefore the possible existence of an intermediate zone between the sixth zone and that found by Hathaway Oil Co. has not been determined.

Pongratz Petroleum Co. recompleted No. 1 Martin in the west end of the Montebello field flowing 1,350 bbls. of 36.2-gravity oil per day through a 1-inch bean after deepening the hole to the lower production member of the sixth zone with bottom of the hole at 6,700 feet. This well showed salt water on a production test last week but this was remedied with a recement job on the 6⅝-inch casing. No. 29 Monterey of St. Helens Petroleum Co. has been completed flowing 410 bbls. of clean 35.6-gravity oil daily from the sixth zone with bottom of the hole at 6,580 feet. It was finished in the upper part of the sixth zone and its production is therefore in line with normal condition of the horizon. No. 28 Monterey, in the western end of the extension, on a formation test of one hour with the tester at 6,674-6,729 feet indicated a possible daily production



Standard Oil Co. has completed derricks for two new wells offsetting Franco Western Oil Co. Nos. 15 and 16 in the McKittrick field of Kern County. Union Oil Co. may undertake offset work in the near future

TANKER SHIPMENTS FROM LOS ANGELES TO DOMESTIC AND FOREIGN PORTS

Intercoastal-domestic—	December 10 Total this week	December 10 Daily average	December 3 Total last week	December 3 Daily average	This year to date	Same time last year
Crude oil	.....	.....	71,211	10,173	924,037	129,788
Fuel oil	.....	.....	70,297	10,042	129,261	.....
Diesel and gas oil	.....	.....	.....	.....	.....	176,726
Gasoline	.....	.....	173,822	24,832	2,879,623	3,910,327
Kerosene	.....	.....	.....	.....	333,626	328,907
Foreign exports:						
Crude oil	234,686	33,527	316,499	45,214	20,311,197	15,231,815
Fuel oil	322,259	46,037	444,410	63,487	8,859,452	13,355,970
Diesel and gas oil	20,998	3,000	16,640	2,377	5,381,652	7,710,303
Gasoline	299,521	42,789	98,619	14,088	7,643,343	7,842,979
Kerosene	131,975	18,854	.....	.....	1,082,726	2,003,872
Asphalt	.....	.....	.....	.....	7,563	.....
Lubricants	.....	.....	.....	.....	175,560	12,984
Other unfinished oil	.....	.....	.....	.....	.....	1,028,732
Coastwise-domestic:						
Crude oil	186,059	26,580	233,850	33,407	10,849,642	5,633,012
Fuel oil	200,604	28,658	230,197	32,885	11,726,447	14,828,841
Diesel and gas oil	34,345	4,906	18,966	2,709	1,461,390	2,222,701
Gasoline	335,586	47,941	123,187	17,598	13,862,919	15,327,545
Kerosene	6,647	950	.....	.....	247,203	424,255

TANKER SHIPMENTS FROM SAN FRANCISCO TO DOMESTIC AND FOREIGN PORTS

Intercoastal-domestic—						
Diesel and gas oil	.....	.....	.....	.....	251,560	408,269
Gasoline	.....	.....	.....	.....	25,409	151,052
Kerosene	.....	.....	.....	.....	16,124	72,750
Asphalt	.....	.....	.....	.....	490,039	413,885
Lubricants	.....	.....	.....	.....	19,945	28,548
Foreign exports:						
Crude oil	106,735	15,248	.....	.....	4,885,105	3,312,802
Fuel oil	41,196	5,885	.....	.....	2,364,454	1,894,635
Diesel and gas oil	.....	.....	.....	.....	3,052,566	2,854,584
Gasoline	.....	.....	.....	.....	5,167,496	5,211,560
Kerosene	.....	.....	.....	.....	696,099	916,817
Asphalt	.....	.....	.....	.....	56,258	.....
Lubricants	.....	.....	.....	.....	534,142	591,854
Coastwise-domestic:						
Fuel oil	189,212	27,030	196,418	28,060	6,240,512	6,153,007
Diesel and gas oil	39,915	5,702	22,605	3,229	1,499,106	1,392,445
Gasoline	191,706	27,387	146,809	20,973	7,440,811	5,710,665
Kerosene	32,128	4,590	13,512	1,930	643,387	405,569

TOTAL TANKER SHIPMENTS FROM CALIFORNIA TO DOMESTIC AND FOREIGN PORTS

Crude oil	.....	.....	71,211	10,173	924,037	129,788
Fuel oil	.....	.....	70,297	10,042	129,261	.....
Diesel and gas oil	.....	.....	.....	.....	251,560	584,995
Gasoline	.....	.....	173,822	24,832	2,905,032	4,061,379
Kerosene	.....	.....	.....	.....	349,750	401,657
Asphalt	.....	.....	.....	.....	490,039	413,885
Lubricants	.....	.....	.....	.....	19,945	28,548
Foreign exports:						
Crude oil	341,421	48,774	316,499	45,214	25,196,302	18,544,617
Fuel oil	363,455	51,922	444,410	63,487	11,223,906	15,250,605
Diesel and gas oil	20,998	3,000	16,640	2,377	8,434,218	10,564,887
Gasoline	299,521	42,789	98,619	14,088	12,810,839	13,054,539
Kerosene	131,975	18,854	.....	.....	1,778,825	2,920,689
Asphalt	.....	.....	.....	.....	63,821	.....
Lubricants	.....	.....	.....	.....	709,702	604,838
Other unfinished oil	.....	.....	.....	.....	.....	1,028,732
Coastwise-domestic:						
Crude oil	186,059	26,580	233,850	31,979	10,849,642	5,633,012
Fuel oil	389,816	55,688	426,615	60,945	17,966,959	20,981,848
Diesel and gas oil	74,260	10,609	41,571	5,939	2,960,496	3,615,146
Gasoline	527,292	75,327	269,996	38,571	21,303,730	21,038,210
Kerosene	38,775	5,539	13,512	1,930	890,590	829,824

of 1,400 bbls. per day. Fluid reached the surface in 11 minutes and oil production was turned to traps 15 minutes later. Preparations are now under way to run in a string of casing and liner and complete in the usual manner. Brookline Oil Co. has concluded drilling on No. 1 Drake Community at 6,705 feet and is swabbing for a production test. The hole was finished with 6,365 feet of 8⅝-inch water string and 365 feet of 5¾-inch liner including 61 feet of 120 mesh perforated. Union Oil Co. staked location for three new wells and all should be started within a short time. Standard Oil Co. spudded in No. 4 Braun and has derricks erected for No. 5 Braun and No. 4 Harvey both of which are scheduled for early work. Herley-Kelly, Inc., has also started a new well and has rig ready for rotary drilling equipment.

Southeast Coalinga

Superior Oil Co. completed another excellent producing well in the Southeast Coalinga field of Fresno County and Standard Oil Co. should complete No. 1-17-F shortly, as this offset to R. S. Lytle No. 88-7-F, which showed large production, is within striking distance of the pay at present. Superior Oil Co.'s well is No. 2 Coalinga fee in Section 7-20-16 and it was brought in flowing 2,500 bbls. of very clean 32.5-gravity oil and 550,000 feet of natural gas per day from 7,187 feet, flowing through a 16/64-inch bean and the initial daily production does not therefore represent the well's real potential. No. 2 Coalinga fee is producing from 422 feet of oil zone, top having been logged at 6,743 feet and bottom at 7,165 feet. Superior's northwest outpost, No. 1 Cagle in Section 6-20-16, is not yet deep enough to permit satisfactory correlation but should reach the depth at which the Gatchell zone is expected within another 10 days. This well will go a long way toward determining whether the western limits of production are defined by a fault or present a normal condition.

North Belridge

The North Belridge field of Kern County is one of the best illustrations that production can be curtailed by cooperative effort. This field which was given a daily allotment of 14,985 bbls. per day for the month of December has been under-producing about 2,500 bbls. per day. Production has only been averaging a very small part of the field's potential all during the year. Tide Water Associated Oil Co. completed well No. 22 in Section 22-27-20 flowing 350 bbls. of 32.4-gravity oil per day from the Wagonwheel zone with bottom of the hole at 8,450 feet and then shut it in upon making the usual flow test. Richfield Oil Corp. is starting No. 3 in Section 22-27-20. Belridge Oil Co. No. 4 in Section 27-27-20 is at 8,365 feet and the crew is reaming preparatory to landing a water string. Top of the Wagonwheel zone was logged at 8,270 feet.

Los Angeles Basin

Superior Oil Co. in an effort to evaluate its holdings in the Rosecrans field has started a deep test in search of an eighth productive zone. Superior's No. 12 Maxwell, a deep test, has passed the 8,670-foot level but has not found anything encouraging since passing through the O'Dea zone.

East of the Rosecrans field, Western Gulf Oil Co. has reached a depth of 8,210 feet in No. 1 Bagg which is being drilled in an effort to develop commercial production against a fault trap but has not had any showings.

In the Potrero field of Los Angeles Basin, No. 2 Potrero of Basin Oil Co. has been completed flowing 1,275 bbls. of 43.5-gravity oil cutting 2 per cent through a 22/64-inch bean along with 600,000 feet of gas. This well was carried down to 6,176 feet but was subsequently plugged back to 6,035 feet and the 8⅝-inch string reperforated. Basin Oil Co. has been exceptionally successful in this selective work which requires careful drilling in order to take in just the right amount of oil sand. None of the thin lenses can be produced simultaneously with others and thus the procedure is to produce from one until it has been exhausted and then drop back to one higher up

(Continued on Page 82)

STANDARD OIL CO. OF CALIFORNIA AND UNION OIL CO.

Crude oil prices at the well effective June 22, 1938

Gravity—	Signal Hill (Long Beach)	Seal Beach	Alamitos Heights	Huntington Beach	Inglewood	Playa del Rey	Olinda-Brea Canyon	Athens-Rosecrans	Dominguez	Elwood Terrace	Torrance	Richfield	Whittier-El Coyote (La Habra)	Montebello	W. Coyote Hills	Santa Fe Springs	Mountain View	Elk Hills	Buena Vista Hills	Midway-Sunset	Lakeview Area	Lost Hills	Coalinga	Santa Paula*	Wheeler Ridge	Kettleman Hills	Orcutt*
14-14.9	$.80	$.79	$.74	$.78	$.79	$.80	$.76	...	...	...	$.80	$.76	$.78	$.77	$.78	...	...	$.70	$.70	$.70	...	...	$.70	...	...	...
15-15.9	.80	.79	.74	.78	.79	.80	.76	...	...	...	.80	.76	.78	.77	.78	...	...	.70	.70	.70	...	...	.70	...	...	...
16-16.9	.80	.79	.74	.78	.79	.80	.76	...	...	...	.80	.76	.78	.77	.78	...	...	.70	.70	.70	...	...	.70	...	...	$.70
17-17.9	.80	.79	.74	.78	.81	.80	.76	...	...	...	.80	.76	.78	.77	.78	...	...	.70	.70	.70	...	...	.71	...	...	.70
18-18.9	.80	.79	.74	.78	.84	.80	.78	...	...	...	.82	.76	.78	.77	.78	...	...	.70	.70	.70	...	...	.78	...	...	.72
19-19.9	.82	.79	.74	.82	.87	.84	.81	...	...	...	.85	.76	.78	.77	.78	...	$.70	.74	.74	.71	$.70	...	.75	...	...	.74
20-20.9	.85	.79	.74	.85	.90	.88	.84	...	...	...	.88	.78	.82	.77	.80	...	.70	.78	.78	.72	.70	...	.77	...	...	.77
21-21.9	.88	.79	.74	.89	.93	.93	.88	...	...	...	.91	.80	.85	.77	.84	$.78	.73	.82	.82	.74	.70	...	.79	...	...	.80
22-22.9	.92	.82	.74	.92	.96	.98	.92	...	...	...	.93	.84	.89	.78	.88	.78	.77	.87	.86	.78	.72	...	.82	...	...	.83
23-23.9	.95	.86	.77	.96	.99	1.02	.96	$.84	$.79	...	.96	.88	.93	.82	.92	.78	.80	.92	.90	.83	.76	...	.85	...	...	.86
24-24.9	.99	.91	.80	1.00	1.02	1.06	.99	.88	.81	...	.99	.91	.96	.85	.96	.82	.84	.97	.94	.86	.79	...	.87	...	...	.88
25-25.9	1.03	.95	.82	1.03	1.05	1.11	1.03	.93	.83	...	1.02	.95	...	.89	.99	.86	.88	1.01	.98	.90	.83	...	.90	...	...	.91
26-26.9	1.06	1.00	.85	1.07	1.09	1.16	1.06	.98	.86	...	1.05	.98	...	.92	1.03	.90	.91	1.06	1.02	...	...	...	.92	...	...	.93
27-27.9	1.10	1.05	.88	1.11	1.12	...	1.10	1.03	.88	...	...	1.02	...	.96	1.06	.95	.95	1.10	1.06	...	...	...	.95	...	...	...
28-28.9	1.14	1.10	.90	1.14	1.15	...	1.14	1.07	.90	...	...	1.06	...	.99	1.10	.99	.99	1.15	1.10	...	...	...	.97	...	...	...
29-29.9	1.17	1.15	.93	1.18	1.18	F.O.B.	1.17	1.12	.93	...	...	1.09	...	1.03	1.14	1.03	1.02	1.20	1.14	...	...	...	.99	...	...	...
30-30.9	1.21	1.19	.95	1.22	1.21	our	1.21	1.17	.95	F.O.B.	...	...	...	1.07	1.17	1.08	1.08	1.25	1.18	...	...	...	1.01	...	...	...
31-31.9	...	...	...	...	1.24	Pipe	1.24	1.22	.97	Ship	...	...	...	1.11	1.21	1.12	1.09	1.29	...	...	...	...	...	...	...	...
32-32.9	...	...	...	...	1.27	Line	1.27	1.27	1.00	...	...	...	...	1.14	1.25	1.16	1.13	1.34	...	...	...	...	...	...	...	...
33-33.9	...	...	...	...	...	...	...	1.32	...	1.28	...	...	...	1.18	1.28	1.20	1.17	1.38	...	...	...	...	...	$1.19	...	...
34-34.9	...	...	...	...	...	...	...	1.37	...	1.32	...	...	...	1.22	1.32	1.25	1.20	...	...	...	...	...	...	1.23	...	...
35-35.9	...	...	...	...	...	...	...	1.42	...	1.35	...	...	...	1.25	...	1.29	...	...	...	...	...	...	...	1.27	...	...
36-36.9	...	...	...	...	...	...	...	1.46	...	1.39	...	...	...	1.29	...	1.33	...	...	...	...	...	...	...	1.31	...	...
37-37.9	...	...	...	...	...	...	...	1.51	...	1.43	...	...	...	1.32	...	1.37	...	...	...	...	...	...	...	1.35	...	...
38-38.9	...	...	...	...	...	...	...	1.56	...	...	...	...	...	1.36	...	1.42	...	...	...	...	...	...	...	1.39	...	...
39-39.9	...	...	...	...	...	...	...	1.61	...	...	...	...	...	1.40	...	...	...	...	...	...	...	...	...	1.43	...	...
40-40.9	...	...	...	...	...	...	...	1.66	...	...	...	...	...	1.43	...	...	...	...	...	...	...	...	...	...	...	...

Newhall, McKittrick, Kern River, Kern Front and Round Mountain, 70 cents for all grades. *Posted by Union Oil Co. Same company's Brea Canyon schedule stops at $1.14 for 28 degrees and over, and Beiridge and Lost Hills schedule stops at $1.32 for 37 degrees and over. By Standard Oil Co., effective October 15: El Segundo, 14 to 18.9 degrees, 80 cents; 19-19.9, 82 cents; 20-20.9, 85 cents; 21-21.9, 88 cents; 22-22.9, 92 cents; 23-23.9, 95 cents; 24-24.9, 99 cents; 25-25.9, $1.03; 26-26.9, $1.06; 27-27.9, $1.10; 28-28.9, $1.14; 29-29.9, $1.17; 30-30.9, $1.21. Wilmington, 14 to 16.9, 75 cents; 17-17.9, 77 cents; 18-18.9 79 cents; from 19 degrees upward, prices same as Signal Hill.

North and East Texas

By D. H. STORMONT

1,000-Barrel Well in Cooke County's Deep Pay Horizon

WICHITA FALLS, Tex., Dec. 19.—Interest in North Texas as the week closed was centered on a wildcat test in Baylor County, where British American Oil Co. is drilling No. 1 F. C. Green, Section 215, T.&N.O. Survey as a "tight" or "mystery" well. With a high board fence around the wildcat, oil scouts resorted to methods used 20 years ago to cover operations of importance. Scouts watched running of casing from a distance with the aid of field glasses. Some estimated that about 2,550 feet of casing was cemented and that the total depth is about 2,600 feet. British American continued to add to its block while royalty prices went to $100 an acre. Tide Water Associated Oil Co. and Indian Territory Illuminating Oil Co. own acreage within the block.

Cooke County's deep sand pool opened last summer by Sinclair Prairie Oil Co. has been given its second oil well. Sinclair Prairie No. 2 Best, a quarter-mile south of No. 1 Best is good for an estimated 1,000 bbls. daily. The well flowed 805 bbls. of oil in 18 hours, naturally, making 58 bbls. during the last hour of the test. Saturated sand was found at 4,920-31 feet. Location is in the Thomas Toby Survey, Abstract 1054, in the extreme northern part of the county.

The possibility of a new oil pool in Montague County was seen at Rogers & Rogers No. 1 Burnett, where, several weeks ago, the same test was pronounced a failure by its former operators. Rogers & Rogers took over the test and deepened it to its old total depth of 4,145 feet, where they began coring. Oil sand was found at 4,189-98 feet, and on a test showed 2,160 feet of fluid, 75 per cent of which was oil, and the remainder salt water. Testing continued as the week closed. Location is in the J. Lenow Survey, Abstract 433, about a mile west of the town of Nocona.

In Archer County, a new 4,500-foot wildcat has been staked as a northeast outpost to the Hull-Silk pool. The well is A. L. Rollins and associates No. 1 Walter Ford, in the D. Meyer Survey, abstract 278, and is about 1¾ miles west of the Louis Sikes No. 1 Ford, in the T. Cecil Survey, which promises a 4-mile extension to the field.

In Clay County, Ralph C. Hart and others completed plans to drill five "grass roots" tests on their tract in the northern part of the county where they recently completed a 10-bbl. well. Saturated sand was drilled at 228-33 feet. The well is on the Mary Stephenson farm of Block 3, Thornberry subdivision.

EASTERN TEXAS

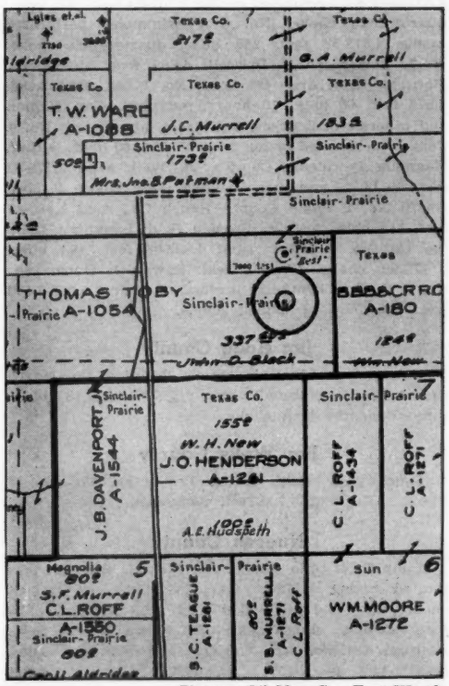
DALLAS, Tex., Dec. 19.—The eastern Texas district showed an upturn in wildcatting activities as two new locations were announced for Houston County and one each for Angelina, Upshur, Morris and Van Zandt counties.

In northern Houston County, John G. Mayo and J. C. Cook, both of Houston, will drill on acreage farmed out by major oil companies. The operators have staked No. 1 J. H. Klob, on a 153-acre tract in the Fred Hemmeger Survey, about 2 miles north of the town of Grapeland. It is on acreage formerly held by the Humble Oil & Refining Co. and the Gulf Oil Corp. and is about a mile east of the Grapeland gas-distillate area. Five miles north of the No. 1 Klob, operators have staked their No. 1 Ida Walling, in the Ben Baker Survey, in the northeast quarter of the survey and on a 212-acre tract.

Upshur County's new wildcat is the R. E. L. Johnson No. 1 Lezzie Parker, in the John B. Gay Survey, about 8 miles northeast of Gilmer. In Angelina County, K. L. McHenry staked No. 1 Humble fee in the T.E. Railroad Survey, one-half mile southeast of Zavalla. Van Zandt County's new operations was the Goddy and Richard & Holloway No. 1 S. H. Rhodes in the L. H. Bass Survey about 6 miles northeast of Van and on a 1,000-acre block. In Morris County, V. A. Hughes started moving in materials for his wildcat in the Eugene Hall lands, L. Jordan Survey, about 5 miles northeast of Daingerfield.

Drilling Developments

Outcome should be known early next week on two tests, one each in Cherokee and Henderson counties. The Henderson County wildcat is J. V. Scrivenor and others No. 1 Richardson Estate, in the Stockard community, which was last reported drilling in the Eagleford shale below 3,905 feet. Operators are withholding



Zingery Oil Map Co., Fort Worth

Sinclair Prairie Oil Co. has extended its new discovery in Cooke County one location to the south to give the field its second producing well

information on the test. In Cherokee County, Bunn Drilling No. 1 Lang, about 7 miles south of Rusk, was drilling below 4,950 feet.

One failure for the district was listed when McGee and others abandoned No. 1 Prichett, southwest of Tolosa in south Kaufman County. The test had been shut down for some time after water was encountered at 3,104 feet. Location is in J. Hendricks Survey and 7 miles west of Mabank.

EAST TEXAS FIELD COMPLETIONS

(One-hour production)

Rusk County—Kilgore Area

American Liberty Oil No. 6 C. O. Christian, 3,675-76 feet, 80 bbls.

Rusk County—Joiner Area

Gulf Oil Corp. No. 13 W. O. Alford, 3,754-55 feet, 7 bbls. Humble Oil & Refining Co. No. 25 J. R. Box, 3,679-3,709 feet, 75 bbls.; No. 17 R. Fuller, 3,655-57 feet, 92 bbls.; No. 63-A R. L. Silvey, 3,645-79 feet, 65 bbls. Ohio Oil Co. No. 21 H. L. Griffin, 3,595-3,639 feet, 20 bbls.; No. 11 M. & R. Kangerga, 3,604-60 feet, 28 bbls. Tide Water Associated No. 9 Flannagan, 3,652-65 feet, 60 bbls.

Gregg County—Longview Area

Potter Brothers-Birdson & Harbow No. 1 Smith, 3,619-62 feet, 40 bbls. McCurdy & Carr No. 8 G. W. Richey, 3,546-56 feet, 126 bbls. Shell Petroleum Corp. No. 42 J. Moore, 3,514-3,605 feet, 60 bbls. Smith-Dorough No. 7 C. C. Clements, 3,624-28 feet, 110 bbls. Tide Water Associated No. 21 Sheppard, 3,658-78 feet, 90 bbls.

Gregg County—Kilgore Area

Byrd-Forst No. 5-A J. B. Watson, 3,550-85 feet, 52 bbls.; No. 2-B Watson-Hulsay, 3,544-3,672 feet, 46 bbls. Estelle Oil & X.Y.Z. Oil No. 3 I.&G.N. R.R., 3,587-3,625 feet, 36 bbls. Gulf Oil Corp. No. 16 T. C. Reeves, 3,570-78 feet, 67 bbls. C. V. Landsberry No. 1 W. B. Walker, 3,601-02 feet, 50 bbls. Overton Refining Co. No. 21 I.&G.N. R.R., 3,552-74 feet, 20 bbls.

EAST CENTRAL TEXAS COMPLETIONS

(24-hour tests)

Henderson County

Richards & Holloway No. 1-B J. P. Tarkington, 3,056-67 feet, 310 bbls.

Kaufman County

W. S. McGee No. 1 Pritchett, dry and abandoned at 3,104 feet.

NORTH TEXAS COMPLETIONS

Archer County

Alliance Oil Co. No. 1 F. O. Loftin, 1,002 feet, dry. L. T. Burns No. 1 N. J. Wood, 901 feet, dry. Ratnke Oil Co. No. 2 Claude Cowan, 1,164 feet, dry.

Clay County

Bridwell Oil Co. No. 19 T. C. Thornberry, 1,081-85 feet, 198 bbls.; No. 20 T. C. Thornberry, 1,078-1,110 feet, 110 bbls.; No. 21 T. C. Thornberry, 1,077-1,110 feet, 89 bbls.; No. 22 T. C. Thornberry, 1,077-1,100 feet, 89 bbls.; No. 23 T. C. Thornberry, 400 feet, dry. R. C. Hart No. 1 T. P. Duncan, 1,174 feet, dry. Marvin Hudson No. 7 State, 155-69 feet, 7 bbls.; No. 8 State, 324-32 feet, 25 bbls. Sussex Oil Corp. No. 16 C. J. Shumake, 1,134-60 feet, 72 bbls.

Jack County

Hanlon-Buchanan No. 1 J. Ellis, 1,292 feet, dry; No. 1 W. B. Munson, 1,477 feet, dry. Royal Petroleum Corp. No. 2 A. Kuykendall, 3,130 feet, dry; No. 3 A. B. Kuykendall, 3,160 feet, dry. Southern Oil & Gas Co. No. 1 A. Eason, 4,618 feet, dry. Texas Crusader Oil Co. No. 1 M. L. Pigg, 3,601 feet, dry.

Montague County

H. H. Powell No. 1 Arch Durham, 2,001 feet, dry.

Wichita County

W. E. Bernhard No. 3 T. O. Shappell, 238 feet, dry. Board of Mineral Development No. 15 State, 3,660-3,800 feet, 600 bbls.; Roy I. Carter No. 1 Horn, 1,722 feet, dry. Chapman & McFarlin No. 3 Waggoner B, 3,744-3,954 feet, 1,500 bbls. Fisher & Dudley No. 1 F. P. Warren, 1,354-80 feet, 70 bbls. W. F. Houston No. 2 J. H. Oates, 217-21 feet, 2 bbls. Dorian & Mitchell No. 7 Sue Mitchell, 1,595-1,616 feet, 53 bbls.; No. 8 Sue Mitchell, 1,700 feet, dry. P. T. Fulwood No. 3 Waggoner, 3,734-65 feet, 285 bbls. W. E. Hammon No. 1 H. C. Obenhaus, 2,505 feet, dry. T. F. Hunter No. 44

Something NEW

in

Balls and Seats

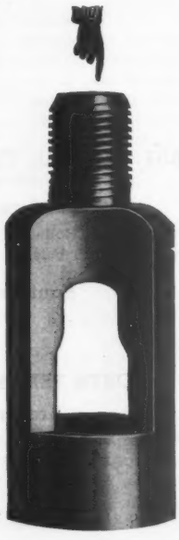
This is the NEW
B-M-W TOWER
TYPE BALL
and SEAT

Tests prove that the conventional valve seat now commonly used is distorted in the process of assembling in the complete valve. Tests also prove that by elongating the upper portion of the seat and machining grooves in it, as clearly shown here, all possibility of distortion is eliminated.

This new B-M-W Ball & Seat has been subjected to thorough tests in actual pumping service under a wide variety of conditions. Very successful runs have been reported. Complete information on request.

And This is the NEW

B-M-W 2-WAY
NON-MAGNETIC
CROWN



Every pump operator knows how the so-called "standard design" of valve crown is frequently beaten out in the wings by the spinning of the ball. Also, there is often a magnetic condition in oil wells which causes the ball to stick in the upper portion of the crown. These two troubles are eliminated by this new B-M-W 2-WAY crown. Complete information on request.

USE BOTH TOGETHER

These two new B-M-W devices, used together, provide a truly ideal combination.

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sell the above as well as other B-M-W Products: ● ADMORE Insert Pump Anchors; ● NEILSON TOOLS (Safety Sucker Rod Hooks, Tubing Hooks, Rod Elevators, Sucker Rod Sockets, etc.); ● ADMORE Liner Barrels; ● TEX TYPE Plunger Fittings and Valves; ● COLLINS Belt Clamps; and ● BALLS and SEATS (made for every pumping service).

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OIL WELL SUPPLIES
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CYLINDER HEADS

(DIESEL AND OTHER TYPES)

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Waggoner A, 3,990-4,053 feet, 50 bbls. A. P. Kouri No. 2 N. H. Martin B, 3,679-3,802 feet, 1,050 bbls. Mitchell Oil Co. No. 2 Sue Mitchell, 3,893-3,942 feet, 665 bbls. Panhandle Refining Co. No. 5-A Reilly Griffin, 3,751-3,810 feet, 1,500 bbls. Texas Co. No. 19 Waggoner A, 3,735-3,832 feet, 782 bbls.

Young County

P. Atchley No. 12 S. M. Benson, 961 feet, dry. W. F. Collins No. 1 Young, 570-626 feet, 6 bbls. H. B. Spaaks No. 6 Campbell 910 feet, dry. A. T. Strong No. 2 J. J. Gribbs, 3,883-3,988 feet, 700 bbls. Goldy and others No. 1 Ann Brogden, 3,735-3,995 feet, 300 bbls.

Southwest Texas Fields

(Continued from Page 68)

No. 7 Vandenberge, 5,457 feet, 336 bbls., three-sixteenths inch choke.

Guadalupe County

Darst Creek field: Gulf Oil Corp. No. 7 Tadlock, 2,628 feet, 204 bbls., pumping. McNeil Petroleum Co. No. 1 Malaer, 2,595 feet, 51 bbls., pumping. Trio Oil Co. No. 2 Anderson, 2,597 feet, 52 bbls. oil, pumping.

Duval County

Fitzsimmons field: Amerada Petroleum Corp. No. 2 Fitzsimmons, perforated casing 4,307-09 feet, 106 bbls., quarter-inch choke; No. 3 Fitzsimmons, perforated casing 4,318-32 feet, 258 bbls., quarter-inch choke. H. J. Porter No. 7 Driscoll, 4,665 feet, abandoned. Hoffman field: Argo Oil Corp. No. 1 fee, sand 2,796-2,815 feet, 69 bbls., 10 hours, pumping. Cox, Hamon and others No. 2 Casas, 2,877 feet, abandoned; No. 1 Cuellar, perforated casing 2,730-35 feet, 60 bbls., jetting. Magnolia Petroleum Co. No. 20 Well, sand 2,776-87 feet, 50 bbls., pumping. Lundell field: Moore & Massingill No. 1 Duval County Ranch Co., sand 1,480-85 feet, 115 bbls., jetting. Sweden field: Longhorn Drilling Co. No. 1 Miller, sand 4,892-98 feet, 194 bbls., 5/32-inch choke. Tesoro field: Rowan & Hope, Inc., No. 2 Cuellar Brothers, perforated casing 5,096-5,103 feet, 110 bbls., 5/32-inch choke.

Jim Hogg County

Kelsey field: Humble Oil & Refining Co. No. 3 Kelsey Bass, perforated casing 4,728-35 feet, 135 bbls., three-sixteenths inch choke.

Jim Wells County

South Alice field: Antex Production Co. No. 1 Florence Ragland, 5,700 feet, abandoned.

Nueces County

Luby field: Ohio Oil Co. No. 7 K. L. Shaeffer, perforated casing 5,172-74 feet, 147 bbls., eighth-inch choke. Stanolind Oil & Gas Co. No. 14 McCann, 4,335 feet, 135 bbls., eighth-inch choke. Clara Driscoll field: Houston Oil Co. No. 1 Koemel, perforated casing 5,439½-44½ feet, 157 bbls., 5/32-inch choke. Saxet field: Houston Oil Co. No. 5 Isensee, sand 4,844-47 feet, 115 bbls. in 12 hours, jetting. Western Gulf Petroleum Co. No. 10 Isensee, perforated casing 5,774-80 feet, 120 bbls., quarter-inch choke. West Saxet field: C. Andrade No. 6 Dunn, 4,107 feet, abandoned. E. H. Drilling Co. No. 1 Rand Morgan, perforated casing 3,846-55 feet, 106 bbls., jetting. Phillips Petroleum Co. No. 2 Pope, 6,030 feet, abandoned. Renwar Oil Co. No. 4 Harrington, 5,443 feet, 600,000 feet of gas, eighth-inch choke; No. 21 McKinzie, perforated casing 5,810-15 feet, 115 bbls. in eight hours, 11/64-inch choke.

Refugio County

La Rosa field: G. S. I. and others No. 1 Michna, sand 6,355-59 feet, 152 bbls., eighth-inch choke. Hewitt & Dougherty No. 1 F. B. Rooke, perforated casing 5,897-5,901 feet, 155 bbls. oil, 5/32-inch choke. Refugio field: Morgan & Morgan No. 2 Mitchell, perforated casing 6,310-20 feet, 75 bbls. distillate in 18 hours, three-sixteenths inch choke. Tomoconnor field: Copano Oil Co. No. 42-B O'Connor, sand 5,829-39 feet, 606 bbls., quarter-inch choke. Quintana Petroleum Co. No. '3 Williams, perforated casing 5,539-43½ feet, 184 bbls., eighth-inch choke.

San Patricio County

Plymouth field: Pantex Petroleum Co. No. 5 State, perforated casing 5,611-14½ feet, 147 bbls., 9/64-inch choke.

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(For Deep Wells)

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The Dragon Mfg. Co.,
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NOBS COMPOSITION C-U-P-S
(For Shallow Wells)

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PROMPTLY

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Texas and Louisiana Gulf

By NEIL WILLIAMS

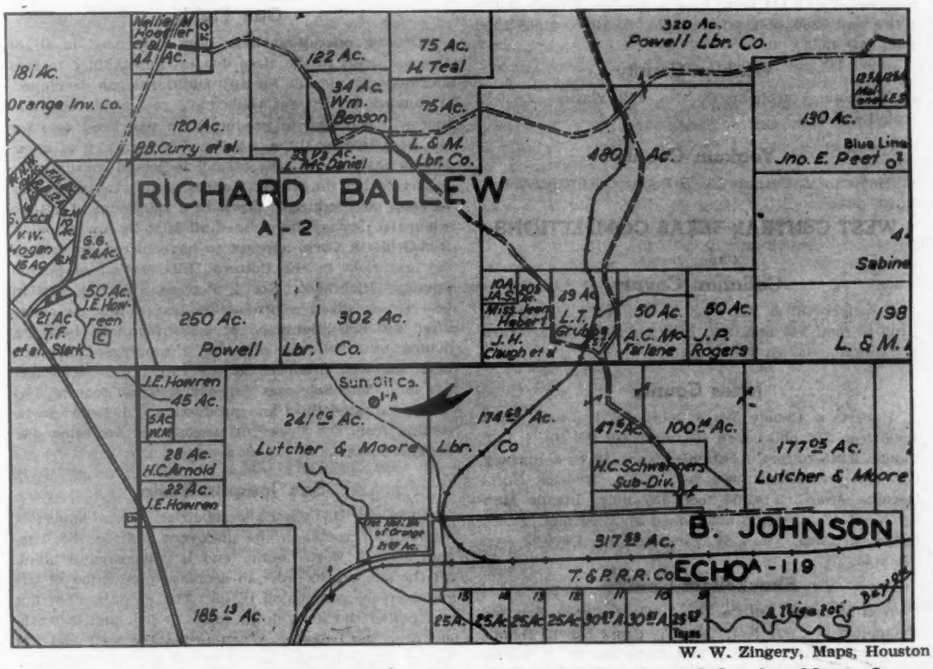
Field Extensions and Good Wildcat Showings Reported

HOUSTON, Tex., Dec. 19.—The Cheek pool, Jefferson County, was being converted into a field of major importance as Humble Oil & Refining Co. prepared to complete No. 2 Jefferson Land Co., 1½ miles northeast of production. Sand showing oil was topped at approximately 7,700 feet, and the section was cored to a total depth of 7,720 feet. Casing was being cemented and the well is scheduled to be tested this week. The well is located northeast of the company's No. 1 Todd, approximately 1 mile north of the field proper, recently completed as Cheek's best producer. The sand section in No. 2 Jefferson Land Co. was logged at about the same level as in the Todd producer, which indicates a uniform sand condition.

North of Orange, in Orange County, Sun Oil Co. was running casing in No. 1-A Lutcher Moore Lumber Co., a wildcat on the Echo prospect in the B. Johnson Survey. This well attempted to blow out last week at 8,945 feet, and was drilled to a total depth of 9,402 feet where an electrical survey was made. The survey showed sand with 6 ohms resistance at 7,849-7,860 feet.

Stanolind Oil & Gas Co. No. 1-38 State, approximately a mile south of the Turtle Bay field, offshore from Chambers County in Turtle Bay, was scheduled to be tested. This test was drilled to a depth of 8,530 feet, and 5½-inch casing was cemented at 6,673 feet to test a sand at 6,639-46 feet. The showing was indicated on an electrical survey, and four sidewall cores of the section showed oil sand. Salt water was cored in the regular Frio section, and the present showing is logged as the Marginulina formation.

sands below the discovery horizon and is preparing to test. The hole is bottomed at 9,310 feet, with 7-inch casing cemented on bottom. Sand showing oil was cored at 9,250-54 feet, and porous sand with a good oil odor at 9,294-9,304 feet. Should the well fail to produce from this sand, the hole will be plugged back and a test made in the discovery horizon at 9,105-23 feet. One-half mile west of the discovery well, George Echols No. 1 Security Investment Co. failed to make a commercial producer in the discovery horizon and the hole has been plugged back to test a higher sand at 8,945-70 feet. This well has been in the process of completion for several days. It was originally tested through perforated casing at 9,062-94 feet, and flowed 40 per cent wash water, 40 per cent mud and 20 per cent oil through a quarter-inch tubing choke with tubing pressure 175 pounds and casing pressure 825 pounds. It flowed at this rate for several hours and then went dead. The casing was then perforated at 8,995-9,006 feet, and an estimated 5 bbls. of fluid per hour, 50 per cent oil and the balance salt water, was swabbed. The perforations were squeezed off and the cement drilled out to 9,115 feet, and the well flowed 4 bbls. of fluid per hour, 86 per cent oil and the balance salt water. Northeast of the discovery well, Phillips Petroleum Co. No. 1 Patton topped the Large Discorbis at 6,948 feet, Heterostegina at 7,285 feet, Round Marginulina at 7,436 feet and the Flat Marginulina at 7,552 feet.



W. W. Zingery, Maps, Houston

Echo area, Orange County, showing location of Sun Oil Co. No. 1-A Lutcher Moore Lumber Co. which is preparing for a production test

League City Field

In the League City field, Galveston County, Midstates Oil Co. No. 1-A Maco Stewart, an east offset to the discovery well, has cored two promising oil

A Harris County Failure

Jack Frazier and others No. 1 Griffith, in the Mount Houston area, Harris County, was expected to be abandoned following a third production test in which the well swabbed 15 per cent oil and 85 per cent salt water. The test was made through perforated casing at 4,078-81 feet, and the hole was swabbed down 2,000 feet when salt water showed. The showing was logged in the Frio formation and additional tests are expected to be started in the area after the first of the year.

Additional development for the west flank of the Fairbanks field, Harris County, was forecast following the showing of Amerada Petroleum Corp. and Stanolind Oil & Gas Co. No. 2 Peters, an outpost test located in the W. K. Hamblin and T. Hogan surveys. The well is being tested through perforated casing at 6,964-68 feet, and during a 23½-hour gauge it flowed 276 bbls. of fluid of which 159 bbls. was oil and the balance salt water. The flow was through a 5/64- and 10/64-inch adjustable choke. This is the "Look" sand which produces on the extreme east side of the field.

Tide Water Associated Oil Co. No. 1 M. A. Roy, one-half mile southwest of production at Eureka, Harris County, is coring for the deep sand below 8,100 feet. A sand showing gas and distillate was logged at 8,043-73 feet, while other showings were logged at intervals from 7,609-7,960 feet. The well is located in the J. Reinerman Survey, about 1,200 feet northwest of the company's No. 1 Ford, a dry hole.

Louisiana Coast

Along the Louisiana coast, Texas Co. No. 1 La-Terre, the discovery well of the Golden Meadows prospect, La Fourche Parish, has been killed to recomplete after the well began to show a large percentage of salt water. The well was completed last week through perforated casing at 8,500-20 feet for an initial production of 638 bbls. of 37.4-gravity oil, but began to show as much as 49 per cent salt water, and during the last 24 hours before the well was killed, it flowed 242 bbls. of net oil and from 8 to 20 per cent salt water. The perforations have been squeezed off and the well will be recompleted at 8,495-8,510 feet.

The newly opened North Tepetate field, Acadia Parish, was extended a half mile southeast and a new sand was opened as Atlantic Refining Co. completed No. 2 Klumpp, Section 12-7s-2w, for an initial production of 158 bbls. of 55.4-gravity distillate per day, flowing through a 5/16-inch choke, with tubing pressure 2,195 pounds and casing pressure 3,025 pounds. Production was obtained from a deeper sand through perforated casing at 8,478-8,504 feet. The discovery well was completed as a distillate producer from sand at 7,960-70 feet.

George E. Lilly and others No. 1 W. K. Rice, a half mile east of the Bancroft field, Beauregard Parish, was completed as one of the best producers in the field. Sand showing oil was topped in the upper Cockfield formation at 7,326 feet, and the well was completed at a total depth of 7,338 feet, for an initial production of 650 bbls. of 42-gravity oil through a quarter-inch choke with tubing pressure 1,200 pounds and casing pressure 500 pounds.

In the Bateman Lake field, St. Mary Parish, Texas Co. No. 1 Wax Bayou was tested through perforated casing at 10,115-135 feet, and tested dry gas on a drill-stem test. This is the sixth test made, all of which have shown oil, gas and salt water. In the Horseshoe Bayou field, the same company's No. 2 State is coring in shale and lime below 12,512 feet and is scheduled to be drilled to 16,000 feet.

In the Grand Bay field, Plaquemines Parish, Gulf Oil Corp. No. 1 State topped oil sand at 7,137 feet and cored to 7,147 feet, the total depth, and 9⅝-inch casing was cemented at 7,135 feet. This is the second sand logged, a drill-stem test at 6,662-77 feet having shown 270 feet of oil on a recent drill-stem test.

Outpost Abandoned

Humble Oil & Refining Co. No. 1 Desire Miller,

Section 32-11s-6w, 2 miles north of the discovery well of the Chalkley gas field, Calcasieu Parish, has been abandoned at a total depth of 8,684 feet.

On the Henderson salt dome, St. Martin Parish, Texas Co. No. 11 St. Martin is being rigged up with a pumping unit after the well failed to flow when tested through perforated casing at 8,060-65 feet. On a recent drill-stem test through the above perforations, the well tested 38 stands of oil, gas and fresh water.

In the Lake Pontchartrain area, Orleans Parish, W. T. Burton staked locations for two wildcats along the Louisiana & Nashville Railroad right of way. No. 1 L.&N. R.R. is located in Section 18-11s-15e, while No. 2 L.&N. R.R. is in Section 1-12s-14e. The same operator is drilling two wildcats simultaneously on this prospect. No. 2-B Faubourg, Section 1-10s-13e, is drilling below 9,410 feet, while No. 1 State-Lake Pontchartrain is drilling in sand below 10,098 feet.

Union Sulphur Co. No. 1 Racca, south of production at the Woodlawn field, Jefferson Davis Parish, is testing, making an estimated 111 bbls. of net oil and from 22 to 26 per cent salt water. The well is flowing through a quarter-inch choke from perforated casing at 8,895-99 feet.

TEXAS GULF COAST COMPLETIONS IN PROVEN FIELDS

(24-hour production)

Brazoria County

Danbury field: L. D. Nantz No. 2 Blakely-Winston, 2,117 feet, 3 bbls., one-eighth inch choke. Hastings field: Humble Oil & Refining Co. No. 3-C Brown, 6,080 feet, 624 bbls., quarter-inch choke.

Chambers County

Anahuac field; Humble Oil & Refining Co. No. 16 Gripon, sand 7,048-80 feet, 629 bbls., quarter-inch choke. Cotton Lake field: Humble Oil & Refining Co. No. 4 Casey, 6,489 feet, 120 bbls. one-eighth inch choke. Seabreeze field: Sun Oil Co. No. 1 Tate, 8,581 feet, 4,140,000 cu. ft. of gas, quarter-inch choke.

Galveston County

Dickinson field: Humble Oil & Refining Co. No. 25-A Maco Stewart, 8,732 feet, 648 bbls., quarter-inch choke. Midstates Oil Co. No. 1 Holmes, perforated casing 8,680-99 feet, 364 bbls., three-sixteenths inch choke.

Harris County

Fairbanks field: Amerada Petroleum Corp. and others No. 3 J. E. Davis sand 6,822-53 feet, 144 bbls., one-eighth inch choke. Amerada Petroleum Corp. and others No. 2 Mary Foley, sand 6,823-49 feet, 123 bbls., one-eighth inch choke. Bridwell Oil Co. No. 3 Gipson, sand 6,766-6,850 feet, 214 bbls., one-eighth inch choke. Windsor Oil Co. No. 1-A Ley, sand 6,842-56 feet, 632 bbls., quarter-inch choke. Friendswood field: Humble Oil & Refining Co. No. 19 Gray, sand 5,929-6,037 feet, 605 bbls., quarter-inch choke. Humble Oil & Refining Co. No. 5 West, sand 5,511-6,042 feet, 594 bbls., quarter-inch choke. Tomball field: Humble Oil & Refining Co. No. 1-B Milo, sand 5,555-68 feet, 479 bbls., quarter-inch choke.

Jackson County

Cordelle field: Lewis Production Co. No. 3 Drushel, 2,716 feet, 94 bbls., three-sixteenths inch choke.

Liberty County

Hardin field: Atlantic Refining Co. No. 1-A Partlow, sand 7,589-7,606 feet, 343 bbls., quarter-inch choke. Shell Petroleum Corp. No. 1-B West, 7,635 feet, 519 bbls., quarter-inch choke. Woodley Petroleum Co. No. 1 Humphries, sand 7,578-88 feet, 413 bbls., quarter-inch choke.

Orange County

Orange field; Union Producing Co. No. 3 Lutcher Moore Lumber Co., perforated casing 5,596-5,606 feet, 120 bbls., 14/64-inch choke. Red Bank Oil Co. No. 2 Harmon, perforated casing 5,745-61 feet, 288 bbls., three-sixteenths inch choke.

Polk County

Segno field: Providence Oil Co. No. 1 Wing, sand 8,150-58 feet, 792 bbls., quarter-inch choke.

Wharton County

Pickett Ridge field: Payton Bros. No. 2 L. Kainer, sand 4,690-4,702 feet, 165 bbls., one-eighth inch choke. Withers field: Humble Oil & Refining Co. No. 1 Blue Creek Ranch, 5,542 feet, 74 bbls. one-eighth inch choke. Texas Co. No. 24-B Pierce, sand 5,532-49 feet, 129 bbls., one-eighth inch choke. Texas Co. No. 53-C Pierce, 5,540 feet, 112 bbls., one-eighth inch choke.

West Texas Fields

(Continued from Page 69)

Co. No. 3 J. E. Witcher, 4,025-4,202 feet, 1,207 bbls. Carter and Phillips No. 2-A Wasson, 4,895-4,970 feet, 1,471 bbls.

Howard County

Eastland Oil Co. No. 2-B T.&P., 2,645-2,791 feet, 1,444 bbls. Illinois Oil No. 9-B Davis, temporarily abandoned location. Shell Petroleum Corp. No. 1-A D. H. Snyder, Jr., 2,640-2,880 feet, 405 bbls.

Menard County

C. D. Hagerty No. 1 Callan, dry and abandoned at 1,270 feet.

Pecos County

Cox & Moore No. 1 White & Baker, dry and abandoned at 1,805 feet. J. D. Kugle No. 1 W. C. Jackson, 1,940-2,073 feet, 162 bbls. Charles E. Marsh No. 4 Nettleville, temporarily abandoned location. Ohio Oil Co. No. G-1-3 Yates, dry and abandoned at 450 feet. Pantex Oil No. 3 State, 1,798-1,823 feet, 510 bbls. Peerless Oil & Gas No. 5-A Pecos Valley, 1,528-78 feet, 333 bbls. Samwan Oil No. 8 J. S. Masterson, temporarily abandoned location; No. 9 J. S. Masterson, temporarily abandoned location.

Upton County

Basin Oil No. 6-A Baker, 2,200-67 feet, 1,137 bbls. Brown-Hancock-Hines No. 5-C Elder, temporarily abandoned location. Cordova-Union No. 11-A fee, temporarily abandoned location. J. W. Ellis, Trustee, No. 12-B J. W. Robbins, temporarily abandoned location. Ursula No. 4 King, 2,135-55 feet, 20 bbls.

Ward County

Disney & Messenger No. 1 W. H. Allrad, 2,195-2,255 feet, 121 bbls. J. E. Fitzpatrick No. 1 Dyer, dry and abandoned at 5,144 feet. Luse & Ice No. 5 Blair, 2,034-2,107 feet, 360 bbls. Texoil No. 3 Allen, 1,938-2,100 feet, 237 bbls.

Winkler County

Magnolia Petroleum Co. No. 199 Walton, 2,820-81 feet, 1,656 bbls.

Yoakum County

Honolulu & Cascade No. 5 Bennett, 5,070-5,262 feet, 1,540 bbls.

WEST CENTRAL TEXAS COMPLETIONS

(24-hour tests)

Callahan County

Danciger Oil & Refining Co. No. 1 C. J. Peterson, 2,011-16 feet, 145 bbls. W. A. Stiles No. 1 F. E. Clark, dry and abandoned at 852 feet.

Jones County

Roberts & Choate No. 3 George Williamson, 1,873-1,900 feet, 385 bbls. Iron Mountain Oil Co. No. 1 J. T. Taylor, 3,215-26 feet, 1,440 bbls.; No. 1 Jones & Stasney, dry and abandoned 3,605 feet. L. A. Hedrick No. 1 Dorotha Akard, 2,147-54 feet, 137 bbls. Lucille Manley No. 1 fee, dry and abandoned at 2,300 feet. Sandy Ridge Oil Corp. No. 4 W. Lon Steffens, 1,870-93 feet, 321 bbls.

Shackelford County

Iron Mountain Oil Co. No. 1 W. H. Green, dry and abandoned at 1,801 feet. John T. Cross No. 19 Dennis Heirs, 553-54 feet, 40 bbls. Maracaibo and W. E. Butler No. 4 J. H. Nail, 1,415-27 feet, 3 bbls. Fox & Rudd No. 1 F. W. Shotwell, 1,622-32 feet, 340 bbls.

PANHANDLE FIELD COMPLETIONS

(24-hour tests)

Carson County

Northern Natural Gas Co. No. 1 Hodges, 2,755-2,845 feet, 12,803,000 feet of gas. Texas Co. No. 5 Cooper, 3,145-70 feet, 513 bbls.

Gray County

Bradshaw Oil & Gas Co. No. 8 Sackett, 3,225-75 feet, 427 bbls. Cities Service No. 1-B Wall, 3,240-48 feet, 559 bbls.; No. 17 Hughey B, 3,158-84 feet, 132 bbls. Magnolia Petroleum Co. No. 23 fee (227), 2,795-2,860 feet, 482 bbls. Wilma Petroleum Co. No. 3 McKinney, 3,160-3,276 feet, 874 bbls.

Hutchinson County

Dolomite Production Co. No. 4 Perkins, 3,000-67 feet, 702 bbls. Cy Rieger No. 4 Gorves, 3,135-80 feet, 771 bbls.; No. 4 Hodges, 3,021-63 feet, 609 bbls.

California Fields

(Continued from Page 78)

in the hole. The company is rigging up No. 3 Potrero and expects to have the well under way within another few days. In the Huntington Beach field, J. E. F. Oil Co has completed No. 1 Bruce pumping 140 bbls. of clean 14.5-gravity oil per day from 4,424 feet. This well, which exceeded expectations, built up following completion and appears to be holding up in good shape from a 64-foot sand.

Kettleman Hills

In the Kettleman North dome field, Kettleman North Dome Association (Kenda) completed No. 36-16-Q flowing 1,130 bbls. of 38.1-gravity oil and 1,100,000 feet of gas per day from the Temblor with bottom of the hole at 7,885 feet. Kenda has resumed drilling in No. 54-24-H, in the extreme west end of the Huffman area and will carry it down into the Eocene. Standard Oil Co. No. 46-13-H in Section 13-21-16 also in the west end, tested wet at 10,678-11,030 feet and the 4¾-inch was recemented through perforations at 10,940-45 feet with 30 sacks of cement. There has been a noticeable tendency during the past year for Kenda and Standard to move east along the axis of the North dome and this move will continue in the future. This work appears to have borne out the expectation that the Huffman area would be found to be the most prolific and that production in the east end of the Kettleman North dome structure would be moderate. The Kettleman North dome field is expected to be brought into line with the umpire's allotment as a result of the move to reduce state production to a maximum of 600,000 bbls. per day. This field is only overproducing a few hundred barrels per day.

Gas Fields

Drilling operations have been suspended in all of the gas fields in the state due to the inability to find an adequate market for any additional gas developed. A number of dry gas wells have resumed production and will continue to produce at a restricted rate for the next two or three months. The practice of opening up gas wells to take care of increased consumption of gas during the winter months permits oil producers to keep oil production down to a minimum at a time when the demand for refined oil is at its lowest point. Richfield Oil Corp. appears to have discovered a new dry gas field in the Potrero Hills section of Solano County. Richfield's No. 1 Potrero Hills in Section 10-4-1, was given a production test a few days ago after the hole, bottomed at 5,334 feet, had been redrilled to 3,238 feet. Flowing through a 16/64-inch bean the well produced at the rate of 5,000,000 feet per day. The hole was finished with 50 feet of 4¾-inch perforated liner and production is believed to be coming from the Upper Cretaceous not far below the Eocene contact.

San Joaquin Basin

Richfield Oil Corp. is repairing some imperfect mechanical trouble in its discovery well in the Tupman area of Kern County and is preparing to blank off the gas cap in order to decrease production of gas and increase production of oil. The crew has cut out and pulled the liner down to 8,476 feet and is washing over the balance. When tested the well had 334 feet of 4¾-inch liner including 280 feet of perforated.

Standard Oil Co. completed No. 223-15-D in the Midway-Sunset field of Kern County this week and has a derrick up for another well to be drilled in the same section. Standard's new producer was brought in pumping 158 bbls. of 23.7-gravity oil and 7 bbls. of water along with 60,000 feet of natural gas per day from 3,290 feet. In the Wheeler Ridge field, Richfield Oil Co. is conducting a deep test instead of attempting to produce No. 1 K.C.L. and the well has passed the 9,171-foot level. This well on a formation test at 8,518-8,713 feet showed a recovery of 75 stands of fluid, including about 50 stands of 40-gravity oil. If the company fails to find a deeper zone the well will be plugged back to 8,713 feet and a production test made of this zone which looks promising for commercial production.

Rocky Mountain Area

By
T. R. INGRAM

Southeast New Mexico Has 18 New Oil Wells, 1 Gasser

DENVER, Colo., Dec. 19.—The Ohio Oil Co.-California Co. No. 5-A Kyle, an outside well in Big Medicine Bow, Wyoming, made 70 bbls. per day from the Sundance. The Stanolind Oil & Gas Co. recompleted its No. 29-DT in Salt Creek for 75 bbls. per day in the Tensleep. The Continental Oil Co. No. 2-B Dielman, in Lance Creek, flowed 1,694 bbls. in 24 hours from the Leo sand, and the Ohio Oil Co. No. 6 Cash made 300 bbls. Another wildcat well in Sublette County, western Wyoming, blew out and is running wild with ice mound building up around the derrick.

Cut Bank, in Montana, had three completions and three new operations, including the Yukon Oil Co. No. 1 Lungren, which flowed 100 bbls. from the Moulton sand in 24 hours through the tubing and makes an important discovery. The Consolidated Gas Co.'s Tribal well in the southern part of the field swabbed 250 bbls. first 10 hours. Texas Co. No. 3 Curran was abandoned.

Idaho and Nebraska each reported a wildcat getting under way.

NEW MEXICO

The Lovington area in Lea County, southeastern New Mexico, continued to hold interest of operators in that state with a new wildcat getting started and other tests in the widespread district drilling ahead at various depths.

Repollo Oil Co. No. 1 State, Lease No. 182, is a wildcat located 330 feet from the south and 990 feet from the east line of the E half SW Section 31-16-37, more than 1 mile north of the Westmount Oil Co. No. 1 Amerada, discovery gas well.

Barnsdall Oil Co. No. 1 Humble-State, C NE SE Section 33-16-36, wildcat 3 miles northwest of the Westmount discovery, was dry and probably will be plugged and abandoned at total depth of 4,997 feet, it was reported at the Tulsa offices of the company. It found some oil stains in lime and had some gas showing, but two acid treatments failed to develop production.

Skelly Oil Co. No. 1-N State, C NW NE Section 36-16-36, 2 miles north of the Westmount gasser, was drilling below 3,605 feet in anhydrite and lime, with formations showing a favorable thinning since topping anhydrite. It found brown lime at 3,255 feet, datum of plus 592, and on that marker was only 18 feet lower than the Westmount well. Encouraged by this showing, the Skelly company paid $32,283 for state Tract No. 16 at a lease sale in Santa Fe last week. That tract of 240 acres includes the NW NE, the S half SW and SW SE Section 25-16-36, adjoining to the north the section in which No. 1-N State is located, and the E half SE Section 32-16-36. The company also paid $31,173.80 for 459 acres in Tract No. 19, including the W half SW, the SE NW and the E half Section 31-16-37, east of No. 1-N State.

Amerada Petroleum Corp. No. 1-LA State, C SE SW Section 1-17-36, northwest offset to the discovery well, was bottomed at 2,995 feet in anhydrite and set 9⅝-inch casing at 2,979 feet. Stanolind Oil & Gas Co. No. 1 State, north offset to the discovery, set 9⅝-inch casing at 3,102 feet, 9 feet off bottom.

Twenty wells were completed in southeastern New Mexico the past week, including the Westmount discovery gasser. Two of the completions were in Eddy County, the remainder in Lea County, as follows:

Lea Completions

Westmount Oil Co. No. 1 Amerada, C NW NE Section 12-17s-36e, was completed for 13,000,000 cu. ft. of sweet gas daily after topping gas sand at 3,956 feet. Total depth was 3,986 feet.

Shell Petroleum Corp. No. 2-B State, C NE SE Section 30-17s-35e, had top of pay at 4,465 feet, total depth 4,735 feet, and flowed 392 bbls. of oil naturally in 24 hours through open tubing set at 4,730 feet.

Same company's No. 1-O State, C SE NE Section 34-17s-34e, total depth of 4,785 feet, topped pay at 4,575 feet and flowed 80 bbls. of oil in 15 hours.

Continental Oil Co. No. 3 State H-35, C NW NE Section 35-17s-34e, flowed 28 bbls. of oil in one hour. Total depth was 4,700 feet, top of pay 4,460 feet. Gas gauged 450,000 cu. ft. daily.

Phillips Petroleum Co. No. 2 Hale, C NE SW Section 35-17s-34e, flowed 25 bbls. of oil hourly with 450,000 cu. ft. of gas, through open tubing set at 4,653 feet. Top of pay was 4,180 feet, total depth 4,655 feet.

Cities Service No. 1-L State, C SE SW Section 15-17s-35e, had nothing showing at total depth of 4,854 feet and was abandoned.

Amerada Petroleum Corp. No. 5-VA State, C NW SW Section 22-17s-35e, found pay at 4,518 feet and flowed 139 bbls. of oil in 11 hours through open tubing set at 4,555 feet. Total depth was 4,662 feet.

Shell Petroleum Corp. No. 1-N State, C NW NE Section 28-17s-35e, flowed and swabbed 7 bbls. of oil in three hours and died. The well was treated with 3,000 gallons of acid and flowed 56 bbls. in eight hours. Top of pay was 4,505 feet, total depth 4,710 feet.

Continental Oil Co. No. 2 State A-36, C NE SE Section 36-20s-37e, flowed 6 bbls. of oil per hour after finding sandy lime pay at 3,760-90 feet, total depth.

Continental Oil Co. No. 3 Britt, B-15, C W half NW SW Section 15-20s-37e, found pay at 3,790-3,836 feet, total depth, and flowed 216 bbls. of oil in 24 hours through open tubing. Gas gauged 1,836,000 feet.

L. E. Elliott, formerly Harry J. Shaffer, No. 1-A State, C E half NW NE Section 26-20s-36e, total depth 3,865 feet, was plugged back to 3,847 feet and flowed 5 bbls. of oil daily with 1,000,000 cu. ft. of gas. Top of pay was 3,775 feet.

Stanolind Oil & Gas Co. No. 4-C Hill, C SE NW Section 5-21s-37e, flowed 60 bbls. in 12 hours. Top of pay was 3,704 feet, total depth 3,780 feet.

Gulf Oil Corp. No. 2-D Arnott-Ramsey, C NE NE Section 33-21s-36e, set 2-inch tubing at 3,885 feet, total depth, and flowed 231 bbls. of oil and 480 bbls. of water in 24 hours. Pay was topped at 3,855 feet.

Shell Petroleum Corp. No. 4 Grizzell, C SW SE Section 8-22s-37e, flowed 125 bbls. naturally through open 2-inch tubing set at 3,711 feet. Top of pay was 3,665 feet, total depth 3,712 feet.

Ohio Oil Co. No. 2 Saunders, C NW NW Section 1-22s-36e, flowed 38 bbls. of oil per hour with 1,600,000 feet of gas from pay found at 3,750 feet. Total depth was 3,850 feet.

Gulf Oil Corp. No. 1-F Mattern, C NW NE Section 1-22s-36e, flowed 54 bbls. of oil in 24 hours after setting 2-inch tubing at 3,796 feet. Top of pay was found at 3,715 feet and the well was bottomed at 3,805 feet.

Skelly Oil Co. No. 4 Simms, C NW NW Section 3-23s-37e, total depth of 3,622 feet, topped pay at 3,545 feet, and flowed 328 bbls. of oil daily through open 2-inch tubing, with an estimated 2,000,000 feet of gas.

Schermerhorn Oil Co. No. 3 Woolworth, NW NW SE Section 28-24s-37e, flowed 125 bbls. naturally in eight hours from pay topped at 3,493 feet. Total depth was 3,536 feet.

In Eddy County

Two wells were completed in Eddy County. The Fullerton Oil Co. No. 3-A Johnson, C NW SW Section 35-16s-31e, flowed 156 bbls. of oil in 24 hours from pay found at 3,640 feet. Total depth was 4,259 feet.

Carper Drilling Co. No. 1 Day, NE NE NE Section 3-19s-31e, was bottomed at 2,748 feet, plugged back to 2,693 feet, and swabbed 54 bbls. of oil daily. Top of pay was 2,675 feet.

Lea County

Barnsdall Oil Co. No. 1 Humble-State, C NE SE Sec. 33-16-36. Drlg. 4,953 ft.
Repollo Oil Co. No. 1 State, Lease 182, SW SE SW Section 31-16-37. Loc.
Skelly Oil Co. No. 1-N State, C NW NE Sec. 36-16s-36. Drlg. 3,265 ft.
Amerada Pet. Co. No. 1-LA State, C SE SW Sec. 1-17-36. Drlg. 2,930 ft.
Continental Oil Co. No. 1 State H-22, C SW SE Sec. 22-17-34. Drlg. 3,790 ft.
Continental Oil Co. No. 1 State 1-7, NE NW NE Sec. 7-17-34. T.D. 4,895 ft.; no show; S.D.O.
Devonian Oil Co. No. 1 State-Ritts, C NW NW Sec. 21-17-34. T.D. 4,746 ft.; R.U. pmp.
Drilling & Exploration Co. No. 1-B State, C S½ SE NW Sec. 22-17-35. C.&P.
Geo. F. Getty, Inc., No. 4-F State, C NE NW Sec. 36-17-34. Drlg. 3,075 ft.
Humble O. & R. Co. No. 2-J State, C NW SW Sec. 19-17-35. R.U.R.
Magnolia Pet. Co. No. 2-G State, C SE NE Sec. 24-17-34 T.D. 4,750 ft.; F. 90 B.O. in 12 hrs.
Magnolia Pet. Co. No. 3-M State, C SW NW Sec. 34-17-35 Drlg. 1,579 ft.
Magnolia Pet. Co. No. 20-State-Bridges, C SW NW Sec 24-17-34. Drlg. 3,830 ft.
Magnolia Pet. Co. No. 21 State-Bridges, C NE NE Sec. 23-17-34. Drlg. 3,440 ft.
Maljamar O. & G. Co. No. 1-B Baish, C NE NW Sec. 22-17-32. T.D. 4,157 ft.; blg. S.W.
Maljamar O. & G. Co. No. 1-B Mitchell, C NE SE Sec. 20-17-32. S.D. reprs. 1,400 ft.
Maljamar O. & G. Co. No. 6 Mitchell, C SW NE Sec. 20-17-32. T.D. 3,600 ft.; W.O.S.T.
Maljamar O. & G. Co. No. 1-B State, C SW SE Sec. 16-17-32. T.D. 4,125 ft.; to acdz.
Ohio Oil Co. No. 3 State-McCallister, C SW SW Sec. 25-17-34. Drlg. 4,105 ft.
Phillips Pet. Co. No. 3 Hale, C SE SE Sec. 35-17-34. Cg. 4,140 ft.
Phillips Pet. Co. No. 1 Mabel, C SW NW Sec. 35-17-34. T.D. 4,715 ft.; C.O.
Phillips Pet. Co. No. 12 Santa Fe, C NE SW Sec. 28-17-35. W.O.C. 4,280 ft.
Phillips Pet. Co. No. 13 Santa Fe, C NW NW Sec. 28-17-35. W.O.C. 4,275 ft.
Phillips Pet. Co. No. 14 Santa Fe, C SE SE Sec. 20-17-35. Drlg. 4,363 ft.
Phillips Pet. Co. No. 15 Santa Fe, C NE NE Sec. 28-17-35. Cg. 4,486 ft.
Phillips Pet. Co. No. 17 Santa Fe, C SE SW Sec. 26-17-35. Rng. csg. 4,255 ft.
Phillips Pet. Co. No. 18 Santa Fe, C NW NE Sec. 34-17-35. C.&P.
Phillips Pet. Co. No. 19 Santa Fe, C NW NE Sec. 35-17-35. Drlg. 4,448 ft.
Phillips Pet. Co. No. 20 Santa Fe, C SW SW Sec. 27-17-35. C.&P.
Phillips Pet. Co. No. 21 Santa Fe, C NE NE Sec. 33-17-35. Loc.
Phillips Pet. Co. No. 22 Santa Fe, C NW SW Sec. 26-17-35. Loc.
Shell Pet. Corp. No. 2-F State, C SE SW Sec. 29-17-35. Rng. tbg. 4,725 ft.
Shell Pet. Corp. No. 1-I State, C SW NW Sec. 29-17-35. T.D. 4,753 ft.; C.O. to bttm.; prep. to bail.
Shell Pet. Corp. No. 1-S State, C NE SE Sec. 21-17-35. T.D. 4,745 ft.; tstg.
Shell Pet. Corp. No. 1-V State, C NE SE Sec. 21-17-35. Rng. tbg. 4,680 ft.
Standard Oil Co. of Texas No. 1 State Lease 5, C NW NW Sec. 27-17-35. T.D. 4,654 ft.; tstg.
Standard Oil Co. of Texas No. 1 State Lse. 6, C NW SW Sec. 34-17s-35. Drlg. 1,077 ft.
Standard Oil Co. of Texas No. 2 State Lse. 3, C NW NW Sec. 32-17-35. W.O.C. 1,600 ft.
Standard Oil Co. of Texas No. 3 State Lse. 4, C NW SE Sec. 27-17-35. Drlg. 3,480 ft.
Standard Oil Co. No. 2 State, Lse. 5, C SE NW Sec. 27-17-35. Drlg. 4,385 ft.
Stanolind O. & G. Co. No. 1 State, C SW SE Sec. 1-17-36. Drlg. 3,085 ft.
Texas Co. No. 1-T State, C SE NE Sec. 25-17-34. T.D. 4,725 ft.; to put on gas lift.
Texas Co. No. 1-V State, C NE NW Sec. 34-17-34. T.D. 4,790 ft.; F. 60 B.O. in 3 hrs. and died.
Twin Oil Corp. No. 1-D State, C SW NE Sec. 30-17-35. Drlg. 3,080 ft.
Westmount Oil Co. No. 1 State, C SE NW Sec. 30-17-35. T.D. 4,728 ft.; S.I.
Phillips Pet. Co. No. 16 Santa Fe, C NW SW Sec. 5-18-35. Drlg. 4,261 ft.
Texas Co. No. 3-R State, C SE NE Sec. 6-18-35. Drlg. 4,090 ft.
Amerada Pet. Co. No. 7 Andrews, C E½ NE NE Sec. 23-20-36. Drlg. 2,666 ft.
Continental Oil Co. No. 2 Meyer B-31, C NE SW Sec. 31-20-38. T.D. 3,872 ft.; F. 21 B.O.P.D.; C.O.
Continental Oil Co. No. 8 Reed B-23, CEL SW NE Sec. 23-20-36. Drlg. 3,580 ft.
Continental Oil Co. No. 2 State C-16, SW SW NW Sec. 16-20-37. Drlg. 3,770 ft.
J. M. Rush No. 3 State A-20, NW SW SE Sec. 20-20-37. T.D. 138 ft.; W.O. rot.
J. M. Rush No. 4 State A-20, NW SE SE Sec. 20-20-37. Loc.
Texas Co. No. 16 Lieu-Lands, C NE SW Sec. 20-20-37. Drlg.
Aloco Oil Co. No. 1 Carson, C SW SE Sec. 28-21-37. S.D. reprs. 3,285 ft.
Continental Oil Co. No. 1 Hawk B-6, NW NW SE Sec. 6-21-37. T.D. 3,819 ft.; F. 60 B.O. in 24 hrs.; tstg.
Continental Oil Co. No. 3 Lockhart B-1, C NW SE Sec. 1-22-36. T.D. 1,230 ft.; W.O.C.
Continental Oil Co. No. 6 Lockhart A-18, C W½ NW SW Sec. 18-21-36. W.O.C. 1,480 ft.

Magnolia Pet. Co. No. 1 Carson, C SE NE Sec. 31-21-37. Drlg. 3,180 ft.
Magnolia Pet. Co. No. 3 Hardy, C NE NW Sec. 29-21-37. T.D. 3,810 ft.; F. est. 250 B.O.P.D.
J. M. Rush No. 1 Weatherly, C SW NW Sec. 21-21-37. Drlg. 2,630 ft.
Twin Oil Co. No. 2 State, C SW NW Sec. 32-21-37. Drlg. 3,350 ft.
Francis C. Wilson No. 2 State, C NW NE Sec. 7-21-35. T.D. 3,860 ft.; P.B. 3,858 ft.; swb. est. 100 B.O.P.D.
J. C. Clower No. 1-B Manda, NE NE NW Sec. 28-22-37. Drlg. 3,275 ft.
Devonian Oil Co. No. 2 Christmas, SE SW SE Sec. 28-22-37. Loc.
Humble O. & R. Co. No. 4 Greenwood, C SE SW Sec. 9-22-37. T.D. 3,705 ft.; tstg.
Olean Pet. Co. No. 2 Brunson, SW NE SE Sec. 4-22-37. Fsg. 3,518 ft.
Olean Pet. Co. No. 2 Farrell, SW SE SE Sec. 22-22-37. W.O.C. 1,127 ft.
Lem Peters No. 2 T. O. May, NW NE NE Sec. 34-22-37. T.D. 3,692 ft.; perf. and tstg.
Lem Peters No. 3 L. J. May, C NE SE Sec. 27-22-37. Drlg. 3,495 ft.
Skelly Oil Co. No. 1 Baker, C SW SW Sec. 10-22-37. T.D. 3,752 ft.; flwd. 111 B.O. in 18 hrs.
Twin Oil Co. No. 1-C State, C SE NE Sec. 17-22-37. T.D. 1,160 ft.
Two States Oil Co. No. 3-B Cole, C NE NW Sec. 16-22-37. Drk.
Walter Donnelly No. 1 Davis, C SE NW Sec. 33-23-37. T.D. 3,600 ft.; S.D. repairs.
Great Western Prod. No. 2-B Leonard, C NW NW Sec. 32-23-37. Loc.
Gulf Oil Corp. No. 1 Alley, C NE SE Sec. 10-23-37. T.D. 3,715 ft.; P.B. 3,675 ft.; C.O.
R. Olson No. 1 Blinebry, C SW SW Sec. 29-23-37. Loc.
Texas Pacific Coal & Oil Co. No. 7-A State, NW NW NW Sec. 32-23-36. T.D. 3,748 ft.; P.B. 3,725 ft.; F. est. 25 B.O.P.D. and 6,000,000 ft. gas.
Montecito Oil Corp. No. 1 Woolworth, NE SE SW Sec. 33-24-37. Drlg. 1,360 ft.
Parker Drlg. Co. No. 3 Erwin, C W½ NE SW Sec. 35-24-37. Drlg. 2,964 ft.
Phillips & Pure No. 4 Woolworth, C NW SE Sec. 33-24-37. Loc.
Repollo Oil Co. No. 1 State, 157-C, SW SW SE Sec. 32-24-37. Drlg. 1,590 ft.
Schermerhorn Oil Co. No. 4 Woolworth, C NE SE Sec. 28-24-37. C.&P.
Texas Co. No. 4 Black, C SE NW Sec. 21-24-37. Drlg. 3,386 ft.
Weier Drlg. Co. No. 2 Woolworth, NE SE SW Sec. 28-24-37. W.O.C. 3,236 ft.
Sam Weiner No. 2 Woolworth, SW NW SW Sec. 33-24-37. C.&P.
Anderson & Prichard No. 4 Carlson-Harrison, NE SE NE Sec. 27-25-37. T.D. 3,349 ft.; swb. 8 B.O. in 6 hrs.; W.O.
Anderson & Prichard No. 4 Wells, C NW NW Sec. 5-25-37. T.D. 3,550 ft.; flwd. 14 B.O.P.H.
Culbertson & Erwin No. 2 Henry, SW SE SW Sec. 26-25-37. Drlg. 300 ft.
Geo. F. Getty No. 1-G State, NW NW NW Sec. 2-25-37. Drlg. 1,910 ft.
Gulf Oil Corp. No. 5 Stuart, C NE NE Sec. 10-25-37. Drlg. 100 ft.
Italo Pet. Corp. No. 1 Carlson A-23, NW NW SW Sec. 23-25-37. R.U.R.
Italo Pet. Corp. No. 1 Carlson B-27, NE NW NE Sec. 27-25-37. T.D. 3,364 ft.; P.B. 3,351 ft. to test.
Italo Pet. Corp. No. 2 Carlson B-27, NE NE SE Sec. 27-25-37. T.D. 3,307 ft.; to shoot.
Italo Pet. Corp. No. 1 Indiana Pet. Corp., NE NE NE Sec. 6-25-37. R.U.R.
Richmond Drlg. Co. No. 1-A State, C NW SW Sec. 2-25-37. Drlg. 2,920 ft.
Sam Weiner No. 3 Smith, C N½ NE SE Sec. 4-25-37. T.D. 2,890 ft.; drlg. by lost tools.

Eddy County

Carper Drlg. Co. No. 3 Robinson, SW SW SE Sec. 25-16-31. T.D. 3,885 ft.; fsg.
Dominion O. & G. Co. No. 3 Johnson, C NE SW Sec. 35-16-31. T.D. 3,950 ft.; swedging.
Fullerton Oil Co. No. 4-A Johnson, C SW NW Sec. 35-16-31. Drlg. 267 ft.
Danciger O. & R. Co. No. 1-B Turner, CEL NE SE Sec. 17-17-31. T.D. 3,553 ft.; F. 85 B.O. and S.I.
J. O. & J. H. Hammond No. 1 Paris, NE NW NW Sec. 5-17-29. S.D.O. 25 ft.
English & Harmon No. 1 Stogner, C NW SE Sec. 31-17-31. Drlg. 2,095 ft.
J. E. Hughes No. 1 Brooks, C NE NE Sec. 19-17-28. Rng. tbg.; ball est. 10 B.O.P.D.
Etz Bros. No. 5 State, SE NE SE Sec. 16-17-30. Drlg. 2,930 ft.
Flint Prod. Co. No. 1-L Dexter, SE NW SE Sec. 15-17-30. Drlg. 1,600 ft.
F. G. Keyes No. 3 Red Gulch, NW NW NE Sec. 16-17-28. Drlg. 20 ft.
C. S. Powell No. 1 Smith, NW NW NE Sec. 6-17-29. T.D. 180 ft.
Adkinson Oil Co. No. 1 Brainard, SE SW SE Sec. 5-18-27. Drlg. 1,238 ft.
Farmer & Tallmadge No. 1 Hubbell, NE SW Sec. 4-18-25. S.D.O. 380 ft.
Paton Bros. No. 1 Erwin, C SE SE Sec. 5-18-31. Drlg. 1,985 ft.
Rhodes Drlg. Co. No. 1 Swearingan, NE SE NW Sec. 14-18-31. Drlg. 2,750 ft.
Worth Drlg. Co. No. 1 Taylor, C SW SW Sec. 12-18-31. T.D. 3,600 ft.; swb. and F. 40-50 B.O.P.D.
Yates et al No. 1 Yates, C NW SW Sec. 6-18-30. Drlg. 2,697 ft.
George E. Robb No. 1 Cannon, C SW SE Sec. 4-19-30. Drlg. 200 ft.
George E. Robb No. 1 Vandagriff, SW NE Sec. 6-19-31. Drlg. 800 ft.
Martin Yates, Jr. No. 1 Bowers, SW SE SE Sec. 31-19-27. T.D. 1,180 ft.; est. 25-40 B.O.P.D.; tstg.
Trojan Oil Co. No. 1 Grant, SW SW NE Sec. 33-20s-25e. R.U. mch.
C. F. Ingram No. 1 Page, NE NE SW Sec. 15-21-28 T.D. 2,855 ft. sd.; S.D.O.
Neil Wills No. 1 Vyall, NE SE NW Sec. 13-21s-26e. Drlg. 650 ft.
F. E. Baker No. 1 Eddy, NE Sec. 12-22-27. S.D.O. 2,934 ft.
Barnett Oil Dev. Co. No. 1 King, C NW SE Sec. 23-26-30. Drlg. 1,065 ft.

Chaves County

Nay Hightower No. 1 Billingslea, C SW NE Sec. 28-11-30. T.D. 770 ft.; S.D. for csg.
E. J. Fisher No. 1 Foster, C NW NW Sec. 7-15-26. T.D. 1,281 ft.; S.D.O.

De Baca County

N. F. Woods No. 1 Jones, C NE SW Sec. 17-4n-20. T.D. 190 ft.; S.D.O.
James D. Ward No. 1 Summers, SE NE SW Sec. 15-4n-24e. T.D. 680 ft.; S.D.O.

Roosevelt County

Shell Pet. Corp. No. 1 Harwood, C S½ SE SE Sec. 27 7s-35e. T.D. 5,000 ft.; S.D.O.

NORTHWEST NEW MEXICO

Bernalillo County

Norins Realty Co., Inc., No. 2 Pajarito, Sec. 22-9n-1e. Drlg. below 800 ft.
Norins Realty Co., Inc., No. 2 North Albuquerque, NE SE NW Sec. 10-11n-4e. S.D. 4,450 ft.

McKinley County

Pet. Products Corp. No. 5 Santa Fe, SW NE NW Sec. 1-17-9w. Cmtd. 6⅝-in. 1,604 ft.; W.O.C.
S. Dysart No. 3-A Govt., NE NW NE Sec. 14-14n-10w. Cmtd. 12½-in. 1,320 ft.; 100 ft. sat.
Pet. Products Co. No. 3 Santa Fe, NE NW Sec. 1-17n-9w. Drlg. 50 ft.

Rio Arriba County

Oil City Pet. Co. No. 2 Wirt-Sanchez, C Sec. 12-31-2e. M.I.

San Juan County

Continental Oil Co. No. 85 Rattlesnake, CEL SW NE Sec. 2-29n-19w. Drlg. 794 ft.
Goodrun & Vincent No. 3 Hare, SW NE Sec. 23-29n-11w. Cmtd. 6⅝-in. 665 ft.; W.O.C.
San Juan O. & G. Co. No. 2 Cassidy, NW NW SW Sec. 18-29n-11w. Drlg. 265 ft.
Kutz Deep Test, Inc., No. 1 Govt., C NW NW Sec. 28-28n-10w. Cmtd. 20-in. at 80 ft.; drlg. plg.
Jack Amenda No. 1, NE NE Sec. 14-29n-13w. Drlg. 625 ft.
Al Greer No. 2 fee, SW SE SW Sec. 10-30-11w. Drlg. bl. sh. 830 ft.
Anna Oil Corp. No. 6 Govt., SW NE NE Sec. 33-30n-11w. S.D. 1,885 ft.; W.O. csg.; S.O. in Farmington sd. but will D.D. to Picture Cliff.
Goodrun & Vincent No. 2 Hare, SE SE Sec. 23-29n-11w. Drlg. 1,705 ft.
Goodrun & Vincent No. 1 Seitzinger, NE NW SE Sec. 23-29n-11w. Drlg. 680 ft.
Ted Whetstine No. 1 McGee, NW NW Sec. 20-30n-11w. S.D. 434 ft. for mat.
Bullock & Noland No. 1 Bunce, SW SE Sec. 24-29n-11w. Drlg. 1,023 ft.
San Juan O. & G. Co. No. 1 Cassidy, C SE SE Sec. 19-29n-11w. Drlg. 828 ft.

San Miguel County

Southwest Drlg. Co. No. 1 Conchas, NW NE Sec. 34-17n-21e. T.D. 1,450 ft.; prep. run 13⅜-in. for W.S.O.

Socorro County

Central New Mexico Oil Co. No. 1 Belen gr., SE NW Sec. 16-3n-1e. S.D. 2,965 ft. after rng. 12½-in.

Torrance County

Drice Co. No. 1 Garland, NE SE NE Sec. 32-7n-7e. S. D.O.; H.F.W. at 1,405-13 ft.
Estancia Valley Carbon-Dioxide Dev. Co. No. 1 Crawford, SE NE NE Sec. 32-7n-7e. Drlg. 1,080 ft
Chief O. & G. Co. No. 1 Lee, NW NW SW Sec. 12-6n-7e. T.D. 2,215 ft.; C.O. 300 ft.

Valencia County

Old Spanish Grants, Inc., No. 1 San Clemente, C SE SW Sec. 23-7n-1e. Taken over by C. M. Joiner. M.I. rotary equip.
C. A. Grober et al No. 1 Fuqua, NE NE Sec. 19-5n-3e. T.D. 840 ft. (C.D.); W.O. title adj.

COLORADO

Archuleta County

Boone Dev. Co. No. 1 Newton, SE NW SE Sec. 18-33n-1e. T.D. 303 ft.; prep. to run 10-in.
Pagosa Oil & Dev. Co. No. 1 Macht, C Sec. 32-36-1w. S.D. 1,840 ft.
Axelind Oil Co. No. 1, Sec. 11-32n-2e. Drlg. below 700 ft.

Boulder County

Reynolds & Roher No. 1 Thomas, SW SW Sec. 17-1n-70w. Drlg. 80 ft.

Elbert County

Plymouth Oil Co. No. 1 Brosky-Union Pacific, C SW SW Sec. 19-10s-60w. Drlg. 7,316 ft.

Fremont County

Stanley Thomas No. 1 Rickwalt, SE SE Sec. 2-19s-70w. S.D. 2,460 ft.

Garfield County

Roaring Fork Oil Co. No. 1 Pattterson, C NE Sec. 36-7s-88w. S.D. 2,008 ft. for winter after W.S.O. with 5⅛-in. at 1,757 ft.

La Plata County

N. Spatter No. 1-X Bryce, SE SW SW Sec. 31-33n-9w. T.D. 2,250 ft.; U.R. 8¼-in. from 1,860 ft. to SO.G. at 2,140 ft.

Las Animas County

Hulme-Johnston-Allison No. 1 Azar, SE SE NW Sec. 27-34s-58w. Drlg. 1,025 ft. in 12½-in. hole; reduced at 890 ft.; gas 890-905 ft.

Logan County

West Plains Dev. Co. No. 1 Sheldon, SE NW SE Sec. 3-10s-55w. R.U.C.T.

Moffat County

C. R. Privett's test on Dry Lake is reported bottomed in the Dakota sand at a depth below 1,000 feet. Information considered reliable is that the first 8 or 10 feet of sand was very hard and was followed by a show of oil, probably half a barrel. The 8¼-inch is being underreamed to bottom to shut off a thin water sand about 60 feet above the Dakota. The casing will be cemented by Perkins before drilling deeper into the sand.

Stanolind O. & G. Co. No. 35-SD Parkinson, SE SE NE Sec. 22-4n-92w. T.D. 3,483 ft.; cmtd. lnr.; perf. at 3,480 ft.; tstg.
Isenberg-Parker-Myers No. 1 Myers-State, NW SE NE Sec. 36-4n-103w. Drlg. 700 ft. white L.
C. R. Privett No. 1 Sutton, NE NE SW Sec. 1-5n-96w. T.D. below 1,000 ft.; U.R. 8¼-in.
MacKinnie Oil & Drlg. Co. No. 1 Coles, SW SW SE Sec. 1-3n-92w. Recmtd. 8¼-in. at 3,035 ft.

Montezuma County

McElmo Oil Co. No. 1 West, NE NW NW Sec. 31-36s-17w. Drlg. 4,917 ft.

Park County

South Park Oil Co. No. 1 Lemar, NE NE SE Sec. 34-11s-75w. Drlg. 6,587 ft. fine. hard, sharp sh.

Prowers County

Continental Oil Co. No. 1 Ruby, C NE NW Sec. 31-21s-44w. T.D. 5,434 ft.; drlg. by tools.

Pueblo County

C. E. Puckett No. 1 Barber, NW Sec. 35-21s-66w. S.D. 870 ft. for csg.
Eden O. & G. Co. No. 1 Horse Creek, SW SE Sec. 29-19s-64w. T.D. 1,900 ft.; U.R. 6¼-in. 20 ft. off bttm.

Rio Blanco County

Buford Oil Co. No. 1 Govt., C SW SW Sec. 16-1n-91w. Drlg. 3,548 ft. gr. sh. (basal Penn.).

Routt County

Steamboat Springs Drlg. Synd. No. 1 Brown, C NW NE Sec. 1-6n-86w. T.D. 1,775 ft.; C.O. to D.D.

WYOMING

Big Horn County

Taylor Oil Co. No. 1 Sheets-Govt., SE NE SE Sec. 9-55n-96w. T.D. 1,250 ft.; U.R. 12½-in.
Yale Pet. Co. No. 2 Allen, Lot 52 (approx. SW NW SW Sec. 34-56n-97w). Drlg. Madison L. 3,920 ft.
A. L. Rankin No. 1 Karjajla-Rankin, C SW NW Sec. 10-54n-94w. T.D. 590 ft.; drlg. plug to D.D.
Prescott & Mileski No. 1 Govt., NE NW SW Sec. 15-1n-93w. Cmtd. 8¼-in. at 1,027 ft.; W.O.C.
Clifford S. Johnson No. 1 Johnson, CEL NW NW Sec. 24-51n-93w. Rig; W.O. engine.
Joan Oil Co. No. 1 Howell, NE NW NE Sec. 32-55n-97w. T.D. 2,718 ft.; sulfur wtr. in Morrison at 2,695-2,710 ft.; U.R. 10-in. from 2,555 ft.
John H. Thomas No. 1 Govt., SW SW SE Sec. 3-54n-94w. Drlg. 920 ft.

Campbell County

Fyre & Kreiner No. 2, CSL NW NW Sec. 6-50n-72w. Landed 5⅞-in. on bttm. at 723 ft. and S.D.

Carbon County

The Ohio Oil Co.-California Co. No. 5-A Kyle, C NW SE Section 26-21n-79w, an outside well on the west side of Big Medicine Bow, was completed in the basal Sundance at 5,661 feet for 70 bbls. per day. Top of sand was at 5,619 feet. The 7-inch was cemented at 5,627 feet and perforated opposite the upper part of the pay and sand below the casing was shot. It is a southwest offset to No. 3-A Kyle, which was drilled to test formations below the Sundance without results.

Ohio Oil Co.-California Co. No. 7 Union Pacific-Johnson, CEL NE SW Sec. 23-21n-79w. R.U.R.
Sinclair-Wyo. Oil Co. No. 4 Mahoney, CNL NE SW Sec. 34-28n-88w. Drlg. 4,340 ft. in Embar.
Ohio Oil Co. No. 3-A Baker, SW NW SW Sec. 3-23n-79w. T.D. 2,242 ft.; 6⅝-in. at 2,218 ft.; tstg.
Producers Oil Co. No. 1 Lake Valley, 200 ft. CNL Sec. 14-20n-88w. S.D. 1,916 ft.

Converse County

John Ackard No. 1 Carey, SW NW SW Section 19-33n-73w, a shallow test on the Carey ranch west of Douglas, was plugged and abandoned at 940 feet.

Wyore Oil Co. No. 3 Gaspar, SW Sec. 25-32n-69w. Loc.
Chas. Wheeler et al No. 1 Fitzhugh, NW Sec. 19-31n-71w. Drlg. r.b. 460 ft.
H. O. Emery et al No. 2 Roberts, C SW SE Sec. 2-31n-70w. Drlg. 254 ft.; S.G.
Jack Decker et al No. 1 Simonson, NW NE SE Sec. 16-32n-68w. S.D. 640 ft. for csg.
Wyshawn Oil Co. No. 2 Lindley, C SW SW Sec. 35-32n-69w. T.D. 2,390 ft.; rng. 10-in. from 1,760 ft. to bttm.
Fred Bunker No. 1 Pestal, SE NE NE Sec. 32-32n-69w. T.D. 483 ft.; prep. to run csg.
New Era Fuel Co. No. 2 Mary Gaspar, CNL NW SW Sec. 25-32n-69w. S.D. 670 ft. without tstg.
Wyshawn Oil Co. No. 1 Lindley, NW SE SE Sec. 34-32n-69w. Drlg. 2,665 ft.
Blue Ridge Oil Co. No. 1, SW NW SE Sec. 29-32n-69w. Drlg. 150 ft.
Dr. Harvey No. 1 Granville-Tinnin, NE NE SE Sec. 6-31n-69w. Drlg. 270 ft.

Fremont County

Lincoln O. & G. Co. No. 3 Tribal, SW SW SE Sec. 23-1s-1e. Drlg. 390 ft.
Frank Pouppirt No. 1 Fidelity Tr., SW NE SW Sec. 27-3n-1w. S.D. 1,168 ft.
Tropic Oil Co. No. 1 Govt., C SE SW Sec. 34-27n-90w. Drlg. 3,465 ft.
Consolidated Oil Properties No. 3 Ewart, C SW SE Sec. 16-1n-1w. Drlg. 1,240 ft.
C. E. Nelson No. 8 fee, CWL NE SW Sec. 27-3n-1w. S.D. 1,200 ft.; S.O. 1,095 ft.
Frank Pouppirt No. 2, NW NW SW Sec. 27-3n-1w. M.I.M. (first report).

Hot Springs County

Freudenthal and others No. 7 Patented, NE Tract 51-B, Section 21-43n-92w, first well drilled in the Kirby Creek district for some time, was completed at 495 feet for 15 bbls. of oil and 30 bbls. of water per day.

Italo Pet. Co. No. 1 Skelton-Govt., SE SW NE Sec. 13-44n-98w. Cmtd. 8¼-in. 2,875 ft.; drlg. plg.

Lincoln County

H. C. Harris et al No. 1 Govt., SE NW NW Sec. 23-21n-117w. Drlg. 1,096 ft.

Mazel Skofield No. 1, CWL NE NE Sec. 32-19n-116w. Drlg. 421 ft. (Cumberland dist., first report).

Natrona County

The Stanolind Oil & Gas Co. No. 29-DT, C SW NW Section 35-40n-79w, which was drilled to the granite at 5,420 feet in 1930 and plugged back to the Tensleep and completed, has been recompleted by the selective method at 3,990 feet, total depth. The 6⅝-inch liner was cemented at 3,660-3,984 feet and perforated. It is flowing 75 bbls. per day, 16 per cent water, through a 5/64-inch choke.

The General Petroleum Corp. No. 1 State, on Cole Creek, is at a critical stage at 7,051 feet, in the Wall Creek. Top was at 6,927 feet. It has cored some saturated streaks of sand and a Schlumberger test is being run before cementing pipe and conditioning hole before drilling into the second sand.

General Pet. Corp. No. 2 State, NW SE NE Sec. 16-35n-77w. Drk.; foundations run.
General Pet. Corp. No. 1 State, NW NE SE Sec. 16-35n-77w. T.D. 7,051 ft.; rng. Schlumberger.

Niobrara County

The Continental Oil Co. No. 2-B Dielman, NE NW NE Section 8-35n-65w, a west offset to the Minnelusa Oil Corp. No. 1 H. & M.-3, was completed at 5,549 feet, total depth, in the Leo sand, as a flowing well. It was rated at 1,694 bbls. first 24 hours through the open tubing. The 7-inch was cemented at 5,472 feet and the elevation is 4,486 feet. The well it offsets was completed last August for 2,608 bbls. at 5,543 feet and marked an extension of the proven area half a mile to the south.

Another completion was the Ohio Oil Co. No. 6 Cash-opc-2, NW NW NE Section 4-35n-65w, an inside well, which was drilled to 5,421 feet and made 300 bbls. initial after being acidized with 500 gallons and then with 3,000 gallons. The 7-inch was cemented on top of the Leo sand pay at 5,369 feet. Elevation is 4,412 feet. At first the well was somewhat of a disappointment, swabbing 89 bbls. in 24 hours. After treating with 500 gallons it increased to 126 bbls. and after treating with 3,000 gallons, it made 150 bbls. After cleaning out and conditioning it showed a further improvement.

The Fall River Royalty & Producers Co. No. 10-B Government, CNL SE SE Section 35-40n-61w, in the West Mule Creek field, was completed in the Lakota at 278-292 feet for 3 bbls. per day.

Ohio Oil Co. No. 5 Rohlff, 100 ft. E of C E½ Sec. 32-36n-65w. Loc.
Continental Oil Co. No. 3 Apex-4, SE SW NW Sec. 35-36n-65w. B.R.
Argo Oil Co. No. 9 Elliott, NW SE SE Sec. 5-35n-65w. B.R. (cor. loc.)
Ohio Oil Co. No. 6 Leo O.P.C.-16, NW NE SW Sec. 35-36n-65w. Drk.; M.I.R.
Continental Oil Co. Acct. Buck Creek Oil Co. No. 7-B Schuricht, NE SW SE Sec. 6-35n-65w. Drlg. sh. 2,183 ft.; 13⅜-in. cmtd. 1,324 ft.
F. F. Hintze et al No. 1 Wright-Govt., NW NW SE Sec. 30-36n-63w. Cmtd. 12½-in. at 300 ft.; drlg. plg.
Ohio Oil Co. No. 1 Jones, SE NE SE Sec. 30-35n-62w. Drlg. 2,873 ft. in Deadwood.
J. E. Manning No. 1 Hewitt-Govt., NW SW SW Sec. 4-35n-65w. Loc.
Cow Gulch Oil Co. No. 1 MaGoon, NE NE Sec. 33-35n-64w. Drlg. r.b. 1,040 ft.; top 830 ft.; 10-in. at 840 ft.
Fall River Roy. & Prod. Co. No. 1 Govt., CSL SE SE Sec. 35-40n-61w. Drlg. 1,796 ft.
H. D. Moore et al No. 1 Bergrem, NW Sec. 23-35n-63w. Drlg. 1,850 ft.; no results in Minnelusa.
Adams O. & G. Co. No. 1 Baker, NW NE SW Sec. 8-35n-65w. Drlg. 5,180 ft.; top Minnekhata 4,945 ft.; top Converse 5,103 ft.

Park County

E. J. Preston No. 1, SW SW Sec. 26-58n-98w. M.I.M.
Blue Ridge Oil Co. No. 1 Mau, NE NE SW Sec. 25-58n-98w. Cmtd. 12½-in. 100 ft.; drlg. plug.
Stanolind O. & G. Co. No. 18 Elk-5, NW NE NW Sec. 30-58n-99w. Drlg. 2,268 ft.
Resolute Oil Co. No. 2 State, C SW SW Sec. 16-57n-101w. T.D. 8,690 ft., C.D.; 6⅝-in. 8,330 ft; drlg. plg.

Platte County

Bill Griffin et al No. 1, NE SE NE Sec. 18-30n-67w. S.D. 550 ft.

Sublette County

Another wildcat in the Dry Piney district blew out the past week and is now running wild. This is the Wyoming Petroleum Corp. No. 1 Charles Budd, C NE NE Section 10-29n-113w. It was shut down for the winter at 1,792 feet with only one joint of 13⅜-inch casing in the hole when it broke loose and cleaned the hole. William A. Myers, of Denver, was called to the well by the operator to advise as to the best method of bringing it under control. Myers, in a telephone conversation with Denver parties, said it was a guess as to what the well is making, but that he believed it is around 20,000,000 feet a day. It also is making about 3,000 bbls. of water and this is freezing and making an ice mound around the rig. The horizon from which the gas is coming is not definitely known. The well began spudding last May to go to 5,000 feet. It is located 7 miles to the northeast of the Texas Co.-Frontier Petroleum well. Last named cleaned itself several weeks ago down to around 900 feet supposedly from a gas sand between 400 feet and that depth. Then it began cratering. Last week the craters were thought to have been sealed off when 445 sacks of cement were forced into the crevices. However, it is again running cement to condition the hole before running casing to the bottom at 6,247 feet, after which it will be shut down for the winter.

Texas Co.-Frontier Pet. Co. No. 1 Unit, SE SE SW Sec. 1-28n-114w. T.D. 6,247 ft.; cmtg. off crater.
Yellowstone Oil Co. No. 1, 200 ft. N of S line of the H. L. Budd rnh., SE SE Sec. 31-13n-112w. S.D. 10 ft.
Progressive Oil Co. No. 1 Haddenham, C NE SE Sec. 21-28n-113w. Drlg. 832 ft.
Wyoming Pet. Corp. No. 1 Budd, C NE NE Sec. 10-29n-113w. T.D. 1,792 ft.; trying to kill gas.

Sweetwater County

Sinclair-Wyo. Oil Co. No. 81, SW NW NW Sec. 11-26n-90w. Drlg. 1,325 ft.

Uinta County

Stove Creek Oil Co. No. 3 Govt., CWL SW NW Sec. 26-14n-119w. Drlg. 50 ft.
Stove Creek Oil Co. No. 1 Govt., NE SW NE Sec. 26-14n-119w. Drlg. 1,700 ft.
Stove Creek Oil Co. No. 2 Govt., C SW NW Sec. 26-14n-119w. S.D. 350 ft.

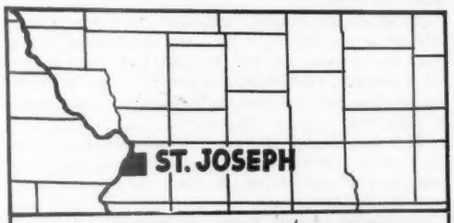
Washakie County

Paul Boether No. 1 Govt., SW NW Sec. 4-47n-90w. Drlg. 2,030 ft.
Frison Oil Co. No. 2 Govt., SE SW NE Sec. 24-47n-90w. S.D. 145 ft.

Weston County

The Conway Oil Corp., which is financed in West Virginia, has made a location in the Dewey district for its No. 3 Government in the C NW SW Section 31-42n-60w, and has let contract to William Clark for a cable tool test to the Leo horizon at 2,400 feet. The location is 1½ miles north of No. 1 Government, which in 1936 was a discovery in the Leo at 2,295-2,305 feet. It was drilled on down to the Madison and then plugged back and was completed for 20 bbls. per day. A southeast offset then was drilled and found water in the Leo sand.

Conway Oil Corp. No. 3 Govt., C NW SW Sec. 31-42n-60w. Loc.; 2,400-ft. test.
Krokar et al No. 1, SE SE NW Sec. 31-47n-63w. Drlg. 200 ft.
James Farrel No. 1 Govt., NE SE SE Sec. 2-44n-61w. Drlg. 74 ft.
Lem Johnston No. 1, C SE SW Sec. 31-44n-62w. Loc.



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Selby & Langford No. 1, CNL NW SE Sec. 6-46n-63w. Drlg. 100 ft.
Whedon et al No. 1, Sec. 21-46n-64w. Drlg. below 300 ft.
F. R. Dilger, Tr., No. 16, SW SW NE Sec. 30-46n-63w. T.D. 1,402 ft.; recmtd. csg.
West Osage Oil Co. No. 3, SW SE NE Sec. 15-46n-64w. Hd. tight sd. 2,140-54 ft.; will shoot.
John Borophy No. 1 George, SW SE NW Sec. 26-48n-64w. Drlg. 2,240 ft.

MONTANA

Big Horn County

Buzetti & Corkins No. 1, NE NW Sec. 23-1s-32e. M.I.M.

Blaine County

G. R. Teeters No. 1 Stam, CSL SW SE Sec. 20-31n-18e. (Formerly R. E. O'Keefe). S.D. 860 ft. for csg.; to Eagle 630 ft.

Carbon County

Valentine M. Kirk et al No. 1 Robinson, SW SW NW Sec. 2-7s-21e. R.U.R.
Alex Beaton No. 1, CSL SE SE Sec. 23-6s-23e. T.D. 1,580 ft.; landed 6¼-in. on bttm.
R. C. Tarrant No. 2, SE NW Sec. 4-6s-18e. T.D. 2,880 ft.; fsg. blr.
Henderson Prod. Co. No. 1-H-11 Elk 11, SE SE NW Sec. 35-9s-23e. S.D. 1,810 ft.
Sha-Wha Pet. Co. No. 1 Govt., SW NW NE Sec. 35-9s-23e. S.D. 3,124 ft.
Miracle Oil Co. No. 2 Govt., CWL NE SE Sec. 4-6s-23e. T.D. 2,337 ft. (C.D.); C.O. to res; will U.R.. to bttm and set csg.

Cascade County

E. B. M. Oil Co. No. 1 Betts, CSL NW SE Sec. 34-18n-4e. T.D. 1,250 ft.; prep. to res.

Choteau County

Security Pet Corp. No. 1 Johnson, C NE Sec. 23-26n-3e. S.D. 1,991 ft.; S.D. for 6⅝-in.; Sunburst 1,935-53 ft.

Dawson County

Frank C. Hughes No. 1 fee, NW NE SE Sec. 5-14n-55w. Drlg. 1,065 ft.

Daniels County

White Tail O. & G. Co. No. 2 Wiley, NW NW NW Sec. 10-36n-50e. Drlg. 1,928 ft.

Fallon County

Montana-Dakota Utilities Co. No. 45, Unit 7, SE NW SW Sec. 25-6n-60e. Drlg. 320 ft.

Fergus County

Baughman & Singley No. 1 Skaggs, C NW SW Sec. 7-15n-20e. S.D. 1,080 ft. (C.D.); in lower Quadrant.
Emmons et al No. 5 Stocker, SW NW SW Sec. 24-22n-18e. Drlg. 950 ft.

Glacier County

Cut Bank had three completions and three new operations. The most important of the completions was the Yukon Oil Co. No. 1 Lungren, SE SE SW Section 23-37n-5w, in North Cut Bank, 4½ miles north of the nearest gasser in the Cut Bank field proper and 7 miles north of the nearest oil well. It flowed 100 bbls. first 24 hours through the tubing at 2,566 feet (corrected depth) total depth, from the Moulton sand, and is the first oil producer in that horizon in the district, although there are some gas wells in that formation. Whether it means an extension of the field to the north or opens another pool is not yet apparent. It had the top of the Moulton at 2,500 feet and a good show of oil at 2,515-25 feet. The 7-inch was cemented at 2,544 feet and from medium coarse gray sandstone at 2,545-62 feet it flowed and swabbed 187 bbls. first 24 hours. It went into gray shale at 2,562 feet to bottom. Elevation is 3,837 feet.

Nadeau Brothers have made a location three-fourths of a mile to the southeast of No. 1 Lungren in the NW SW NW Section 25. This is on a permit which expires December 31 and an attempt will be made to reach that objective within the time limit in order to make a discovery. If not successful, an exchange for a lease probably will be made. The discovery has been followed by extensive leasing in the district.

The Texas Co. No. 3 Curran, NE NE NW Section 8-32n-5w, in the southern part of the field, was plugged and abandoned at 3,000 feet after testing 2 bbls. of oil with a large quantity of water.

The Consolidated Gas Co. has a good well in the southern area in its No. 1 Frary-Tribal-172, NW NE NW Section 18-32n-5w, which swabbed 250 bbls. first 10 hours and then averaged 170 bbls. per day for three days. Total depth is 2,844 feet. The 7-inch was set at 2,772 feet and 96 feet of 6¾-inch liner was cemented at 2,842 feet. Upper Cut Bank was at 2,747-82 feet and lower Cut Bank at 2,795-2,839 feet.

Nadeau Bros. No. 1 Govt., NW SW NW Sec. 25-37n-5w. R.U. (first report).
Glacier Prod. Co. No. 3 Neill, SE SE NE Sec. 20-33n-5w. R.U. (first report).
Glacier Prod. Co. No. 1 Gillard Unit, 100 ft. from N line and 1,320 ft. from W line, Sec. 29-34n-6w. Spdg. 80 ft. (first report).
Glacier Prod. Co. No. 4 State, 2,200 ft. from N line and 1,320 ft. from W line, Sec. 16-33n-5w. Spdg. 275 ft.
K. D. Pardee No. 3 Tribal-179, NW NE SE Sec. 12-32n-6w. Drlg. 625 ft.; Colo. 585 ft.
Santa Rita O. & G. Co. No. 3 Lander, C S½ SE Sec. 16-35n-6w. Loc.

Judith Basin County

Fletcher E. Hunt No. 1 Hoven, SE NE NW Sec. 30-14n-15e. Spd. and S.D.

Park County

Ben Ryan et al No. 1 Burgess, SE SW NW Sec. 28-2s-11e. Drlg. 1,550 ft.

Petroleum County

H. Clark Rowland No. 1 Brundidge-Mink, SE NW Sec. 35-14n-25e. Drlg. 100 ft.
Watson Oil Co. No. 1 Austed, SW NW SE Sec. 22-13n-28e. S.D. 825 ft.
O. B. Canfield No. 2 Govt., SE NE NE Sec. 21-17-24e. Drlg. 779 ft.

Richland County

W. M. Fulton No. 1 Richardson, SW SW SE Sec. 29-26n-52e. Drlg. 540 ft.; small S.W. at 435 ft.

Teton County

Zodiac Oil Co.-Gulf States Oil Co. No. 1 Kellogg, NE NW NE Sec. 33-28n-5w. Drlg. 1,700 ft.
Gulf States Oil-Zodiac Oil Co. No. 1 Coffee-Wallenstein, SW SW SW Sec. 5-27n-5w. S.D. 2,525 ft. until spring.

Toole County

Kevin-Sunburst had one completion in the Big West Oil Co. No. 4 Engle, SW cor. Section 1-35n-3w, which is pumping 20 bbls. per day without acidizing from the Sunburst sand at 1,601-36 feet.

Neptune O. & G. Co. No. 7 Seabrook, NW NW SW Sec. 19-35n-2w. Drlg. 480 ft.
Superior Pet. Co. No. 4 Goeddertz, CEL SE SW Sec. 12-35n-3w. Drlg. 485 ft.
Big West Oil Co. No. 5 Engle, CEL SW SW Sec. 1-35n-3w. Drlg. 1,220 ft.
Henry Vander Pas No. 2 Thompson, NW cor. Sec. 32-35n-3w. Drlg. 1,475 ft.
Mosby Oil Co. No. 1 Pederson, C NE SW Sec. 7-35n-2w. T.D. 1,610 ft.; Sunburst 1,450-78 ft., S.O.; rng. 7-in.
Kluth et al No. 2 Gunderson, SW cor. Sec. 18-35n-2w. Drlg. 575 ft.
Platt-Bell No. 1 Govt., SW NW NE Sec. 9-34n-2w. S.D. 455 ft.
C. L. Smith, Agt., No. 1 Govt., SW SE NW Sec. 13-35n-2w. S.D. 995 ft.
Aspen O. & R. Co. No. 1 Govt., C NE SE Sec. 25-36n-3w. S.D. 2,050 ft.
W. M. Cassidy No. 1 Phoenix, CNL NW NW Sec. 28-35n-4w. S.D. 2,318 ft.
Fulton-Commonwealth No. 2 Thompson, NW NE SW Sec. 28-35n-3w. S.D. 1,665 ft.
Chas. Grant et al No. 1 Anderson, SE NE NE Sec. 26-35n-4w. S.D. 2,109 ft.

Yellowstone County

Signal O. & G. Co. No. 1 Stallinberger, NE NE SW Sec. 18-3n-23e. T.D. 5,129 ft.; prep. to run 6⅝-in. to 4,950 ft. and test.
Riverton Oil Co. No. 1 Fox, CEL NW NE Sec. 14-2n-23e. S.D. 1,990 ft.; 6¼-in. on bttm.

UTAH

Grand County

Cane Creek Oil Co. No. 1 Govt., NW SW Sec. 31-26n-21e. T.D. 2,058 ft.; rng. 6⅝-in.
Crescent Eagle Oil Co. No. 1 Brendel, SW SE Sec. 4-22s-19e. Drlg. 4,110 ft.

Summit County

Longwell Pet. Co. No. 1, SE SW SE Sec. 35-3n-5e. T.D. 2,876 ft.; sdtrkg.

NEBRASKA

C. L. Price has let contract for a cable tool test to 5,500 feet in Hitchcock County in his No. 1 Carter Estate, SE NE SW Section 35-2n-32w.

IDAHO

The Pioneer Drilling Corp. has rig on ground for a 2,500-foot test in Washington County in its No. 1 Community lease, NW SE NE Section 21-11n-5w.

Illinois Fields

(Continued from Page 74)

SE NE Section 16-3n-2e, Benoist sand top 2,111 feet. total depth. J. J. Broadus No. 1 Kaney, NE SW SE Section 1-1n-1e, spudded.

In Randolph County, Ames Drilling Co. No. 1 Nicholson, SW NW NW Section 12-5s-9w, total depth 1,910 feet, plugged back to 1,341 feet and will acidize.

In Perry County, Bert Freeds and Rockhill No. 1 Provert, SW SE SE Section 27-5s-1w, drilling at 2,539 feet.

In Sangamon County, Morris and others No. 1 King. NW NE SE Section 24-15n-7w, had Trenton lime top at 1,797 feet, and was at a total depth of 1,850 feet. Five-inch casing was set at 1,799 feet (corrected).

In Shelby County, Frank Frederick and others No. 1 Fluge, near C N half NE NW Section 34-10n-5e, was drilling at 700 feet; Swords & McDougal No. 1 Darst. NW NW NW Section 17-11s-2e, total depth 1,332 feet. Underreaming 8-inch casing at 1,156 feet. Independent Refiners & Producers No. 1 Hackenburg, SE SW SW Section 20-12n-2e, drilling at 1,311 feet. Jackson & Fisher No. 1 Behren, NW NW NW Section 3-10n-5e, derrick. W. S. Tatum No. 1 Harper, SW NW SE Section 8-12n-2e, coring around 1,700 feet.

In Washington County, Jett & Skidmore No. 1 Hoelscher, SW NE SE Section 25-2s-5w, drilling at 100 feet.

In Wayne County, H. H. Weinert No. 1 King, SE NE SW Section 33-1s-7e, rig up.

In White County, Pyramid Petroleum Co. No. 1 Wade, SE SE NE Section 4-7s-8e, drilling at 1,925 feet.

In Effingham County, H. Gussman No. 1 Wagner, NE SE SE Section 13-7n-5e, set 10-inch casing at 150 feet, drilling.

In Fayette County, R. C. Mayes and others No. 1 Defend, SE NW NW Section 26-4n-1w, materials on ground. Lindsay and others No. 1 Bowers, SE NE SE Section 36-4n-1w, drilling at 1,426 feet.

In Clay County, F. J. Searight No. 1 Wilson, SW SW NW Section 6-5n-5e, drilling at 2,210 feet.

In Gallatin County, J. Garfield Buell No. 1 Sutton, C S half NW NW Section 5-8s-10e, location.

In Jefferson County, Walter Price and others No. 2 Hamilton, SW SW NW Section 20-4s-3e, shut down for orders at 3,150 feet.

In Washington County, L. J. Jordan No. 1 Reinhardt & Scott, C S half SE SE Section 12-1s-3w, drilling at 1,207 feet. J. B. Oberholtzer No. 1 Freiman, SW SW SW Section 10-3s-4w, Benoist sand, top 1,120 feet, drilling at 1,155 feet; no oil showing.

OHIO FIELDS

LIMA, Ohio, Dec. 19.—In the Central Ohio area, gas wells continue to make up the majority of the completions. Noble County heads the list with a well making 1,100,000 cu. ft. from the Berea grit. In Wayne Township, Yoker Valley Oil & Gas Co. No. 1 Fred Day, Section 34, drilled the top of the Berea at 1,400 feet and struck the pay 9 feet in the sand.

In Athens County, Carthage Township, Ed Gibson and others No. 1 J. L. Williams, Section 34, was dry and abandoned at 1,764 feet.

In Ashland County, Hanover Township, Ohio Fuel Gas Co. No. 2 Ida Mapes, Section 15, has an open flow of 300,000 cu. ft. of gas from the Clinton sand at 2,876-84 feet. In the same township, the same company found the Clinton sand dry and broken in the No. 1 Bertha S. Morris, Section 15, total depth 2,760 feet.

In Fairfield County, Walnut Township, City Natural Gas Works No. 1 A. K. Thoman, Section 31, is a Clinton sand gas well gauging 100,000 cu. ft.; total depth 2,004 feet.

In Guernsey County, Millwood Township, Chaseville Oil & Gas Co. No. 1 H. I. Hartley, Section 9, is a small Berea sand gas well at 1,501 feet. In Washington Township, Ohio Fuel Gas Co. No. 1 D. T. Harding, Section 8, is a Berea dry hole with a total depth of 1,397 feet.

In Knox County, Howard Township, H. E. Perkins No. 1 James Norrick, Lot 13, fourth quarter, has a daily open flow of 220,000 cu. ft. from the Clinton sand, total depth 2,705 feet.

In Licking County, Mary Ann Township, Armbruster & Stricker No. 2 C. A. Wright, Lot 21, first quarter, is a small gas well in the Berea sand at 678 feet. In Fallsbury Township, Emerald Petroleum Co. No. 2 Eli Fry, Section 9, had an oil showing in the Niagara lime at 2,447 feet. The well made 15 bbls. of oil during a 72-hour test; now drilling to the Clinton sand.

In Meigs County, Rutland Township, T. J. Chase No. 1 J. M. Stansbury, Section 14, made 100,000 cu. ft. of gas from the Second Cow Run sand at 570-95 feet.

In Morgan County, York Township, Pure Oil Co. No. 22 Charles Swytser, Section 28, found a small showing of oil in the Berea at 1,258-84 feet; will be used as an intake well on a repressuring project.

In Muskingum County, Brush Creek Township, Gas Producing Co. No. 3 William Wentz, Section 17, is a Clinton sand gas well good for 700,000 cu. ft. daily open flow at 4,166-89 feet.

In Tuscarawas County, Lawrence Township, Brendel Producing Co. No. 1 Stowe Fuller Co., Section 25, tested for 790,000 cu. ft. of gas in the Clinton sand; total depth 4,892 feet. In Sandy Township, Lyons Co. No. 1 W. H. Streb, Lot 48, drilled through the Clinton sand to 4,773 feet for a dry hole.

In Washington County, Liberty Township, Depew Brothers No. 1 H. D. Schofield, Section 22, found the Injun sand dry at 1,385 feet; filled back to 1,182 feet and saved for a small third Salt sand gas well.

Lima Field

In Seneca County, Pleasant Township, Jones & Keener abandoned their Green sand test on the S. D. Sours tract in Section 33. Top of the Green sand was found at 2,051 feet; water at 2,060 feet. In Clinton Township, Sun Oil Co. has started drilling its No. 2 test on the Mary Crum tract in Section 7.

North Louisiana, Arkansas

By GEORGE WEBER

New Smackover Lime Field in Columbia County, Ark.

SHREVEPORT, La., Dec. 19.—Tide Water Associated and Seaboard Oil Co. No. 1 Beene, located in C SE NW Section 15-18-19, Columbia County, Arkansas, came in making an estimated 5 bbls. of oil per hour with wash water through a 5/32-inch tubing choke. Tubing pressure was 1,700 pounds and casing pressure 975 pounds. The well is also making an estimated 750,000 cu. ft. of gas per day. The oil is 43.8 gravity corrected.

Seven-inch casing was run to 8,332 feet and was perforated at 8,212-20 feet with 50 shots. The well was washed for 2½ hours before it started flowing under its own pressure. December 17, the well was making an estimated 8 to 10 bbls. per hour through an eighth-inch tubing choke with casing pressure 1,575 pounds and tubing pressure 1,125 pounds. Tankage is being erected.

The new well is situated in a block of several thousand acres in which Tide Water has the controlling number of acres, but in which other majors and some independents are also well represented.

Fohs Oil Co. No. 1 Craig, located in C SE NE Section 15-18-14, Union County, Arkansas, which made some oil and salt water last week on taking a drill stem test on a section of the Smackover line, was plugged and abandoned by the operator. Although the No. 1 Craig did not make a producer it is thought that the possibilities for Smackover lime production east of the old El Dorado field have been definitely strengthened by the showing of this well. The total depth of No. 1 Craig was 6,856 feet in Smackover lime.

North Louisiana

Magnolia Petroleum Co. No. 1-C Pardee in the Cartersville area of Webster Parish, Louisiana, is bottomed at 10,070 feet in hard sandy shale and an electrical testing device has been run. It is understood that the Magnolia will abandon at the above depth. The well is located in C NW NE Section 17-23n-11w and is one of the deepest holes drilled in North Louisiana. The top of the lower Marine formation was 7,990 feet.

In the Cotton Valley field in Webster Parish, Hunt Oil Co. completed No. 2 Davis Unit, C NW NW Section 24-21-10, for a producer in the Bodcaw sand horizon. Seven-inch casing was landed at 8,707 feet and perforated at 8,205-25 feet with 87 shots. The well made 225 bbls. of distillate and 3,084,000 cu. ft. of gas through a quarter-inch choke in 24 hours. Gas-oil ratio was 13,708 to 1.

Three other wells in Cotton Valley field are in the process of completion. They are Hunt Oil Co. No. 10 M. F. Davis, C SE SE Section 13-21-10; having run 7-inch casing to 8,387 feet and preparing to perforate. The Ohio Oil Co. No. 51 Bodcaw, Acct. 2, located 660 feet S and W of NE cor. Section 15-21-10, has run 7-inch casing to 8,583 feet and the crew was preparing to perforate. The well logged the Bodcaw sand from 8,583 to 8,618 feet. Stanolind Oil & Gas Co. No. 1 Webster Development Co., located 660 feet S and 660 feet W of NE cor. Section 35-21-10, has 7-inch casing set at 8,265 feet and is being washed in for completion.

Stanolind and Hunt No. 1 Pardee-Coffee Unit, in NE NE Section 36-21-10, topped the Bodcaw sand at 8,586 feet and was coring at 8,608 feet when a fishing job was necessary.

Shreveport Field

In the new Shreveport field, R. E. Allison No. 1 Jones and Mabry Unit, SE quarter Section 21-18-14, set 5½-inch casing at 5,607 feet and perforated the porous section of the Pettit lime logged at 5,570-77 feet, and swabbed some oil, gas and salt water. The well probably will be squeezed and reperforated.

Meanwhile, R. E. Allison No. 5 Ellerbe, C NE NE Section 34-18-14, topped the anhydrite stringer at 4,068 feet, and Harry Hanbury and others No. 1 Lowe and others, SE SW Section 23-18-14, topped the anhydrite stringer at 4,072 feet and topped the massive anhydrite at 4,336 feet. R. E. Allison No. 4 Ellerbe topped the anhydrite stringer at 4,068 feet and the massive anhydrite at 4,336 feet and is drilling below 4,700 feet. Hurricane Petroleum Co. No. B-1 Chandler, Section 34-18-14, had a show of gas in the Woodbine-Tokio gas horizon at 2,465 feet and is drilling ahead at 2,800 feet.

Joaquin Area

Reddit & Gray No. 2 Pickering Lumber Co., which was testing for a producer during the past week, has been completed making 90 bbls. of greenish-colored distillate and better than 7,000,000 cu. ft. of gas per day from the Glen Rose formation. A 1,500-pound test separator, with a working pressure of 1,000 pounds has been installed on the well. It was thought for some time that this well would make an oil well, but comparing its production with the known distillate saturation of the other gas-distillate wells in the field it seems that the well may have been perforated too high in the porous section to produce oil. Some 42-gravity oil was cut out of the cores taken from the well, however.

In Red River Parish, on the edge of the Bull Bayou shallow field, Magnolia Petroleum Co. No. 59 J. C. Pugh was bottomed at 6,487 feet and after running the electrical formation testing device, it is dry and abandoned at that depth. A porous limestone was encountered from 5,161 to 5,189 feet which made a flow of salt water.

Production by Pool

Estimated daily gross production all companies week ending December 16:

NORTH LOUISIANA

	Barrels
Bellevue	680
Caddo light	4,080
Caddo heavy	2,630
Converse	550
Cotton Valley heavy	100
Cotton Valley light	*8,475
Cross Lake	1,200
De Soto and Red River	1,220
Elm Grove	300
Haynesville	2,800
Holly	85
Homer	2,670
Lisbon	6,460
Pleasant Hill	105
Rodessa	29,975
Sarepta-Carterville	†395
Sligo	1,780
Sugar Creek	300
Urania	2,700
Zwolle	3,200
Total	69,705

SOUTH ARKANSAS

Buckner	1,350
Champagnolle	1,750
El Dorado	1,760
Lisbon	260
Miller County	350
Nevada	615
Rodessa	4,595
Schuler	18,195
Smackover light	1,990
Smackover heavy	15,400
Stephens	540
Troy	935
Urbana	1,120
Village	1,800
Total	50,660

Texas side of Rodessa field 29,760 bbls. daily.

*4,785 bbls. is distillate.
†100 bbls. is distillate.

Sea Transport and Measurement of Petroleum Products

Men engaged in the production, transportation and refining departments of the oil industry should be interested in the new edition of Capt. P. Jansen's book entitled "Sea Transport and Measurement of Petroleum Products." This book is an up-to-date version of Captain Jansen's book "Transport of Petroleum Products. The strides in oil tanker development during the last decade warranted the preparation of a revised book on the modern tanker, the sea transport of petroleum and allied products and their loading and discharge.

The book is divided into 17 chapters with miscellaneous tables appended and in contents and style should command the interest of ships' masters, junior officers on oil tankers, harbor authorities and others concerned with the transport and handling of cargoes of petroleum and allied products. It contains 185 pages with diagrams and drawings of modern tankers and apparatus used for testing oils.

"Sea Transport and Measurement of Petroleum Products" may be purchased through the English publisher at the price of 12 shillings, 6 pence (approximately $3.50), and orders should be placed with T. L. Ainsley, Ltd., Mill Dam, South Shields England.

Kentucky Fields

(Continued from Page 67)

in Big lime, in No. 203 Curtis Pigman, on Right Fork of Troublesome Creek. Same company was drilling at 2,694 feet, in Berea, in No. 205, Kentucky West Virginia Gas Co. land, on Trace Fork of Troublesome Creek.

In Floyd County, Kentucky West Virginia Gas Co. was down 1,770 feet, in Big Lime, in No. 578, Sherwood Osborn land, on Toms Creek, and was drilling at 1,135 feet, in Black lime, in No. 5249, Alie Ward land, on Levisa Fork.

In Martin County, Kentucky West Virginia Gas Co. had reached the 1,780-foot level, in slate and shells, on the John and Benjamin Sellards farm, on Coldwater Fork. The same company is cleaning out No. 5235, on the C. W. Preece land, nearby.

In Lee County, Price Fraley has leased the Dane Mays farm, formerly operated by Hupp & Duff. The wells had been plugged and abandoned. Mr. Fraley says he will redrill this lease and has made a location on the north end of the lease near the Chester Geusly 200 acres. Oaks & Sherman are rigging up at No. 1, on an abandoned railroad right of way, in the same district.

In the Burning Fork district of Magoffin County, Rough River Corp. spudded for No. 4, on H. B. Adams, Sr., land at Rock Lick.

In Lee County, the Hall Co. is down 1,100 feet in No. 1 Crit Childers, in the Hell Creek district. Doctor Leman and others were drilling at 200 feet in No. 1 W. B. Bush, nearby.

Hall & Ogle were drilling at 700 feet in No. 1 High Reed Land Pilot, in the South Fork district of Powell County. Joe T. Brown, treasurer, was drilling at 500 feet in No. 5 Lowery Heirs, at Mount Springs.

Michigan Field Report

By
O. C. PRESSPRICH

Freeman and Bloomingdale Leaders in Results for Week

SAGINAW, Mich., Dec. 19.—Michigan's two most recently discovered oil fields, both less than six months old—Freeman, in Clare County, and Bloomingdale, in Van Buren County—accounted for the major share of new development during the past week, which added 17 new oil wells, 2 gassers, and 7 dry holes. Bloomingdale led new production with eight oil wells for an estimated daily potential of 3,400 bbls., while Clare-Freeman added three wells good for 2,750 bbls. daily. Eight other fields, including gas sectors, shared with one oil well each.

New production showed nearly a 50 per cent increase over the preceding week, although sensational wells were lacking. Only three of the week's new producers were good for 1,000 bbls. daily or more. The largest was a 1,500-bbl. well in the Freeman field.

Wildcat territory accounted for the major share of the dry holes, while a possible new gas field was indicated in New Haven Township, Gratiot County, where a 600,000-cu. ft. gasser was developed.

The November report of the Oil and Gas Association of Michigan follows:

MICHIGAN DAILY CRUDE OIL RUNS

Daily Average for November, 1938

Pool—	Wells	Runs
Porter-Yost	396	6,228
Greendale-Chippewa	217	1,647
Geneva-Midland	2	18
Sherman-Isabella	65	2,300
Wise-Isabella	2	67
Vernon-Leaton-Denver	82	936
Freeman-Temple	33	8,463
Grant-Clare	2	5
Beaverton	23	203
Edenville	29	1,769
Bentley-Gladwin	33	658
Buckeye-Wicklund-Oard	404	11,947
Ogemaw	232	2,658
Secord-Gladwin	2	23
Adams-Arenac	10	147
Clayton-Arenac	52	3,029
Tuscola	1	13
Saginaw area	57	53
Birch Run	25	48
Dundee-Monroe	3	16
Montcalm County	59	595
Allegan County	217	6,707
Muskegon	84	137
Van Buren County	67	6,215
Total	2,097	53,882

Allegan County

Overisel Township (4n-14w)—One producer and one dry hole resulted from attempts at an eastern extension of the Overisel "21" pool. The oil well, Crown Development Co. No. 1 Nyhuis, SW SW SE Section 22, was rated at 250 bbls., natural flow, while the failure was W. S. Cook's No. 1 Nykamp, SW NW SW Section 23, an attempt to extend production still further east.

Salem Township (4n-13w)—In the older section of the Salem field, C. S. Allender No. 1 Sebright, NW SW NW Section 21, gauged at 110 bbls. daily after acid.

Clare County

Freeman Township (18n-6w)—The discovery area of Freeman Township continued steady development with three oil wells added during the week. Two were listed as semicompletions a week earlier, both developing favorably. C. W. Teater No. 1 Van Horn, SW SW NE Section 3, was acidized to an estimated 1,500 bbls. daily to rate the largest well of the week in all fields. Freeman Oil Co. No. 1 Christensen, NE NE SW Section 3, gauged 750 bbls. after acid, and C. L. Maguire No. 2 Barlow, NW NW SE Section 3, was estimated at 500 bbls. daily, natural flow, in the semicompleted state.

Gladwin County

Buckeye Township (18n-1w)—Continuing in the new-production column as well as its domination of state production, Buckeye added one producer. It was Rex Oil & Gas Co. No. 2-A Ruck, NW NE SW Section 26, rated at 100 bbls. daily after acid.

Gratiot County

New Haven Township (10n-4w)—What operators regarded as possible new territory for gas exploration was developed at a wildcat test, E. R. Fothergill No. 1 Blanchard, C SE NW Section 11. The well rated 613,000 cu. ft., and was the only active test in the area.

Isabella County

Sherman Township (15n-6w)—A producer and a failure were developed in the producing area of Sherman. Pure Oil Co. No. 3-A Doyle, NE NE SE Section 32, gauged 438 bbls. daily after acid, while McClanahan Oil Co. No. 2 Terry, SE SW NE Section 32, two locations west and one north of the Pure producer, was dry and slated for abandonment.

Midland County

Ingersoll Township (13n-2e)—A wildcat failure was recorded at C. E. Weller No. 1 Hepinstall, SW SW NE Section 9.

Montcalm County

Winfield Township (12n-9w)—Taggart Brothers, Inc., No. 8 Taggart, C SE Section 6, added a favorable gasser to their Winfield holdings, gauged at 1,760,000 cu. ft.

Ogemaw County

West Branch Township (22n-2e)—Weber Oil Co. No. 2 Crow, SW NE SW Section 35, brought in a highly favorable producer rated above average for the area. It gauged 110 bbls. daily after acid.

Ottawa County

James Township (5n-13w)—Failure was recorded at Red Man Oil Co. No. 1 Alfien, SE SW SW Section 36, a wildcat test west of the Zeeland field.

Van Buren County

Bloomingdale Township (6s-14w)—Eight oil wells and a dry hole summarized drilling developments in the Bloomingdale area as this field continued to lead in exploration and drilling. Two 1,000-bbl. producers topped the list. M. R. & T. Oils No. 2 Merrifield, SW NE NE Section 17, rated 1,000 bbls. acidized, and Wiser Oil Co. No. 2 Boyers, SE NW NE Section 17, was rated at 1,000 bbls., natural flow. C. C. Goff No. 3 Maier, NW SW NE Section 14, and Vance Oil & Gas Co. No. 2 Meek, NW SE NE Section 17, rated 400 bbls. daily each, the first having been acidized, the latter a natural producer. Other good wells were: Archie Henry No. 1 Pelong, NE NE SW Section 14, and W. F. Kemp No. 1 Crewe, SE SE NE Section 17, both 200-bbl., acidized wells; Weber Oil Co. No. 1 Michigan Central, SE SW NE Section 17, 125 bbls. daily, acidized; W. F. Shoemaker No. 2 Sage, SW SE NE Section 14, 75 bbls., acidized. A dry hole was recorded at W. H. Fisher No. 1 Percell, SW SW NW Section 16.

Columbia Township (1s-15w)—Rex Oil & Gas Co. No. 1 Foster, SW SW NE Section 11, developed a small producer as a westerly extension of the Bloomingdale field, but its small production failed to excite producers as a prospective new field. The well rated 16 bbls. daily after acid.

Waverly Township (2s-14w)—Truss & Biggs No. 1 Wilcox, NW SW NE Section 8, was dry and abandoned.

With December figures still in the making, Michigan's oil production total for 11 months of 1938 stands at a record peak for the industry, 1,200,000 bbls. above the full-year total of 1937, the previous peak. December seems certain to add at least 1,500,000 bbls., which will push the 1938 production total past 19,000,000 bbls.

Association Officers

Harold M. McClure, president of Rex Oil & Gas Co., is the new president of the Oil and Gas Association of Michigan, elected December 14 at the annual meeting here. He succeeds Floyd A. Calvert of Pure Oil Co. Other officers are: vice president, C. L. Maguire, of Roosevelt Oil Co.; executive secretary, Arnold J. Weidman; secretary, W. B. Pardoe, of Dapar Oil Co.; treasurer, George B. Talbot, of Talbot Oil Co., and W. P. Clarke, of Gulf Refining Co.

New officers of the Oil and Gas Association of Michigan: Arnold J. Weidman, executive secretary; W. B. Pardoe of Dapar Oil Co., secretary; Harold M. McClure of Rex Oil & Gas Co., president, and W. P. Clarke of Gulf Refining Co., co-treasurer. The vice president, C. L. Maguire of Roosevelt Oil Co., and co-treasurer, George B. Talbot of Talbot Oil Co. and Midway Tool Co., were absent

Canadian Fields

Completions and Operations in Northwest and in Ontario

By VICTOR LAURISTON

CHATHAM, Ontario, Dec. 17.—Pipe line runs from Turner Valley to the Calgary refineries in November totaled 376,250 bbls., or 12,542 bbls. per day against 600,922 bbls., or 19,385 bbls. per day in October and a high for 1938 of 746,026 bbls., or 24,868 bbls. per day in September. The decline was due to heavy restrictions placed on production, which on October 20 was cut from 22,000 to 11,500 bbls. a day. In November, Imperial Oil Refineries took 16,429 bbls. of naphtha and 273,578 bbls. of crude, and British American Oil Co. took 204 bbls. of naphtha and 86,039 bbls. of crude.

Deliveries for the 11 months of 1938 totaled 5,380,371 bbls. compared with 2,363,743 bbls. in the 12 months of 1937.

Canadian Crude Production

Official figures show that in September crude production from all Canadian fields totaled 886,111 bbls. against 817,706 bbls. in August. New Brunswick production declined from 4,135 to 3,261 bbls. and Ontario production increased from 14,548 to 14,911 bbls. Alberta production was up from 799,023 to 867,939 bbls. For the nine months of 1938, New Brunswick production was 18,120 bbls. compared with 16,509 bbls. in the same period of 1937; Ontario production declined from 125,673 to 123,879 bbls., and Alberta production increased from 1,749,615 to 5,174,575 bbls.

Home-Millarville Producer

An important development which may extend the proven Turner Valley crude area far to the north was the striking of commercial crude production in the upper porous horizon of the lime in Home Oil Co. No. 2 Millarville, LSD 6, Section 33-20-3w5. Location, in North Turner Valley, is approximately 11 miles north of the main South Turner Valley crude area.

Home No. 2 Millarville got the Madison limestone at 8,045 feet and entered the upper porous zone at 8,142 feet. Drilling was continued to 8,237 feet, the lime showing about three times the porosity found in the same horizon in South Turner Valley. A packer was placed at the bottom of the hole and a 45-minute production test through the drill stem without clearing the hole of rotary fluid established a production rate of about 40 bbls. an hour with evidence of heavy gas pressure. The production indicated is the largest yet found in the upper horizon of the lime. Tubing has been run and a definite production test made of the upper horizon. If the well proves a big one at this depth, production will be taken from the upper zone, but if not it will be deepened to the lower porous horizon where the main production in the South Turner Valley crude wells is secured. Home No. 3 will be started in the same area as soon as No. 2 is finished.

Extension of Field

The development is regarded as the most important since the first west flank crude well was completed in June, 1936. Home No. 2 is approximately 11 miles north and 5 miles west of Vulcan Brown Petroleums No. 1, the most northerly important crude producer in the south field. The structure has a northwest and southeast trend, sufficient to bring the new development in line with the South Turner Valley crude wells; but there has been little drilling in the intervening area, and practically none west of the old Central Turner Valley naphtha producers. Hence it is uncertain whether the crude production is continuous or whether Home No. 2, with the other and smaller North Turner Valley crude producers represents a distinct field. If the former, the result would indicate continuous production from Home No. 2 to National Petroleum Corp. No. 2, LSD 14, Section 9-18-2w5, in the far south, a length of approximately 16 to 17 miles. Dr. G. S. Hume, of the Geological Survey of Canada, recently stated that the potential oil structure extends at least 7 miles north of Home No. 2, indicating possibilities of a field nearly 24 miles long.

If the North Turner Valley area is a distinct field, it may develop larger producers than the original crude area in the south. Model Oils No. 1 has been a substantial crude producer from the upper porous horizon for over 12 years, and early showings indicate that Home No. 2 is a big producer without drilling to the lower porous zone, so that the latter might yield wells much larger than encountered in the original crude area.

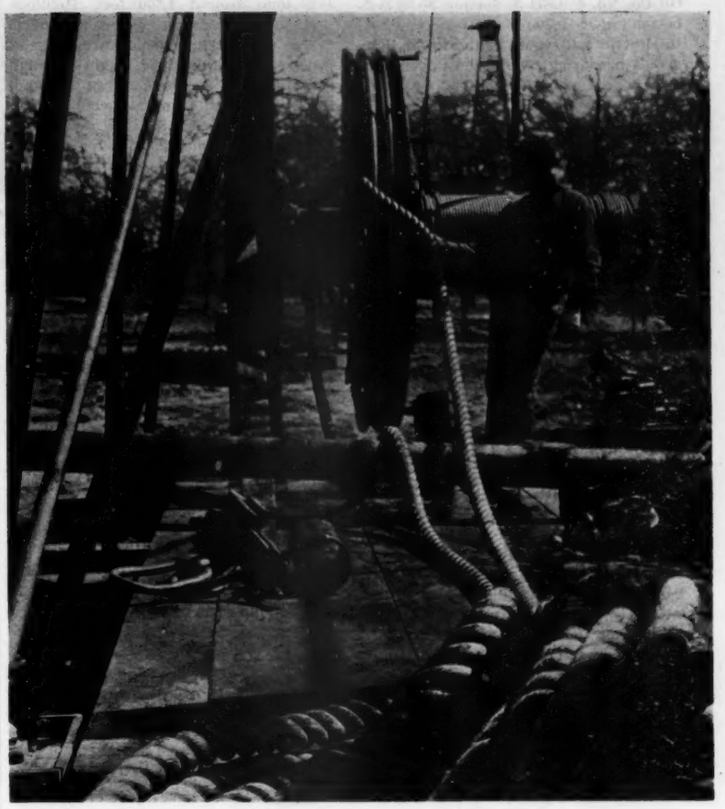
North Development Likely

If Home No. 2 is completed as a large producer, it will probably result in a shifting of drilling activity to the west flank of North Turner Valley. Home Oil Co. holds extensive acreage, and is making arrangements for drilling No. 3 adjacent to No. 2. Considerable acreage is held by various subsidiaries of Imperial Oil, including Royalite Oil Co. "Red" Phillips and associated interests, who drilled Phillips Royalties No. 1 in LSD 16, Section 16-18-2w5, hold acreage in Sections 15-20-3w5, 16-20-3w5 and 21-20-3w5. North of the new producer, Roxana Petroleums holds 2,000 acres in Townships 21 and 22, Ranges 3w5 and 4w5. Other holders of acreage include Vulcan Oils, British Dominion Oil & Development Corp., Alberta Pacific Consolidated Oils, Calmont Oils and Davies Petroleums; and there has been extensive leasing in areas still open some miles to the north and west of the new producer.

South End Completions

On the west flank of South Turner Valley, Producers Crude Corp. (Brown Consolidated) No. 1, LSD 11, Section 20-18-2w5, finished in the black lime at 8,045 feet, some 480 feet in the Madison. It has been tubed, and is testing production.

West of the proven crude area, Okalta



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Oil Co. No. 6, LSD 3, Section 30-18-2w5, bottoming at 10,209 feet, has recemented to shut in salt water in the lower lime, and is preparing to test the upper horizon, where good indications of crude were encountered.

Farther east, Anglo-Canadian Oil Co. No. 1, LSD 16, Section 31-18-2w5, finished at 8,222 feet after getting the Madison at 7,790 feet, has been given allowable of 307 bbls. a day.

Anglo-Canadian Operations

Anglo-Canadian Oil Co. of Calgary, which, directly and through individual royalty syndicates, has developed substantial crude production in Turner Valley, is undertaking development on five new structures outside the Turner Valley field. Petroleum Investments, Ltd., a private company, has been organized to take a 45 per cent interest in the drilling, with the Anglo-Canadian company holding 55 per cent.

The Castle River anticline in the Pincher Creek area of the southern foothills is being tested by Anglo-Canadian No. 1 Castle River, LSD 4, Section 11-6-1w5. The test, drilling with heavy duty rotary equipment, is below 2,094 feet. The company holds 9,000 acres from Paul von Weymarn on 10 per cent royalty.

In the Twin dome area, about 25 miles southwest of Calgary, with holdings around 10,000 acres on royalties ranging from 12½ to 15 per cent, heavy duty rotary outfit will be used for a test in LSD 7, Section 16-21-28w4, near the junction of the Bow and Highwood rivers.

On the Savannah Creek structure, Anglo-Canadian No. 1, SW Section 20-14-4w5, is starting diamond drill test, with production expected in the Devonian limestone around 4,500 feet. Holdings are 11,500 acres on 13 per cent royalty.

On the Bridge dome structure 22 miles east of Milk River, Anglo-Canadian No. 1, LSD 10, Section 4-2-13w4, is standing at 1,950 feet with producing horizon expected between 2,800 and 3,000 feet. The company holds 3,300 acres on 12½ per cent royalty.

About 110 miles east of Calgary, Anglo-Canadian No. 1 Steveville will be started near the Red Deer River in LSD 2, Section 13-21-12w4. The lime is expected between 3,200 and 3,400 feet and rotary tools will be used. Some 19,000 acres, on 13 and 13½ per cent royalty, are held.

The five drilling tests will cost approximately $500,000, and, except that at Savannah Creek, will be drilled by Drilling Contractors, Ltd., an Anglo-Canadian subsidiary. Officers and directors of Petroleum Investments, Ltd., are: President, F. P. Byrne; vice president, W. G. Egbert; secretary-treasurer, J. G. Gemmill, all of Calgary.

Border Fields

In the Taber field, southern Alberta, North Taber Royalties No. 1, LSD 7, Section 10-11-15w4, is deepening after encountering a show of crude with increasing gas pressure in a small sandstone zone at 2,440 feet near the base of the Alberta shales. Production is looked for in the Sunburst sand around 2,840 feet.

New Storage Provided

Storage tanks have been erected for the Mayland group of wells with 80,000 bbls. capacity; and additional storage facilities are being provided by several Turner Valley companies, with the object of building up reserves in the slack period of production to meet peak demands.

Five-Day Week Planned

Effective December 1, the Brown-Moyer-Brown interests in Turner Valley have introduced a five-day week for employes, with a view to keeping additional men in employment through the winter. The shortened week will apply to all departments. The Royalite company has maintained a five-day week in all departments, other than drilling jobs, for several years.

Ontario Fields

In the De Clute field, Kent County, Union Gas Co. No. 44, Lot 142, Talbot Road North, Raleigh Township, finished at 1,550 feet with over 5,000,000 feet a day.

In Chatham Township, Kent County, Ogletree Syndicate No. 2, Lot 13, Concession 5, is below 5,880 feet.

In Oxford Township, Kent County, George H. Rawlings No. 1, Lot 92, South Talbot Road, finished a dry hole around 1,700 feet.

In the Malahide area, Elgin County, Union Gas Co. No. 2, Lot 94, South Talbot Road, Malahide Township, finished a dry hole. A sulfur gas flow was struck around 1,100 feet with some water, but a shot failed to increase the small production, and the test was abandoned. Union No. 4 Malahide, Lot 8, Concession 7, South Dorchester Township, lost the bit in a caving around 700 feet and was abandoned. Union No. 5 is starting in Lot 19, Concession 5, Malahide Township.

In the Dunwich area, Elgin County, Union Gas Co. No. 3 Dunwich, Lot 5 East, Talbot Road North, Southwold Township, finished a dry hole at 1,754 feet.

In the Haldimand field, Union Gas Co. No. 217, Lot 4, Concession 3, Rainham Township, finished at 913 feet with 100,000 feet a day. Union No. 218, Lot 10, Concession 14, Walpole Township, finished at 815 feet with 50,000 feet a day.

In the Brownsville field, Oxford County, Central Pipe Line Co. No. 1, Mrs. Annie Berdan farm, S half Lot 24, Concession 12, Dereham Township, finished around 940 feet with nearly 12,000,000 feet a day. Kidd-Adams No. 1 is being started on the Humphrey farm, N half Lot 28, Concession 11, Dereham Township.

Warwick Shallow Field

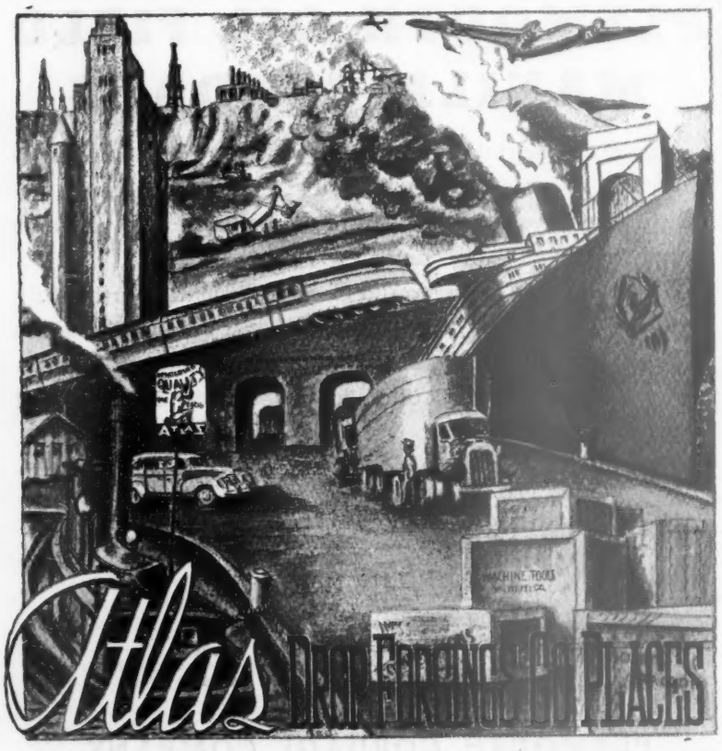
In the Warwick field, Lambton County, Albert Randall of Petrolia, drilling for the Wilson-Sullivan interests on the west half of the Lloyd Easterbrook farm, Lot 26, Concession 5, Warwick Township, finished a good pumper, in the lower lime around 500 feet. Bill McCallum, drilling for Wilson & Sullivan on E half Lot 27, Concession 5, immediately east of the Heal & Birchall well, finished a good producer in the same horizon. Ernest Kells, drilling for Wilson & Sullivan on Lot 24, Concession 6, south of the C.N.R. tracks, finished with considerable oil in the hole and is testing production. This is the most southerly producer yet completed.

East of the main field a test on the William Brigham farm, Concession 6, Metcalfe Township, Middlesex County, leased by Beatty Brothers of Glencoe, got a good show around 490 to 500 feet, and is being put on the pump. Location is about a mile south of Kerwood and more than 5 miles southeast of the discovery well in the Warwick field.

Manitoulin Operations

On Manitoulin Island, Georgian Bay,

(Continued on Page 97)



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WILDCAT OPERATIONS

CALIFORNIA

IMPORTANT WELLS AND NORTHERN CALIFORNIA WILDCATS

Company, well, location, and county—	S.T.R.	Depth	Status
Cole, F. E., No. 18 Paderewski, S. Maria, S. Barbara	28-10-34	5,545	flow 2,250 b.d.
Douglas & Stratton, No. 1 Los Alomos, S. Barbara	8- 8-33	7,237	bail water
Richfield Oil, No. 1 Tinquaic, Foxen Can., S. Barb.	36- 9-32	2,520	sd. sh. drlg.
Centura Drlg., No. 1 Ojai, Ventura	10- 3-23	2,044	sd. sh. drlg.
High Mesa Oil, No. 1 Butcher, Ojai, Ventura	16- 4-22	1,821	sd. sh. drlg.
Claran Oil, No. 1 Hardison, Sespe, Ventura	22- 4-20	1,880	sd. sh. drlg.
Merchants Pet., No. 8 Hillside, Sespe, Ventura	1- 4-20	1,520	sd. sh. drlg.
Ivers, H. A., No. 14 Kentuck, Sespe, Ventura	1- 4-20	252	sd. sh. drlg.
Speik Oil, No. 2 Speik, Sespe, Ventura	33- 5-19	3,635	rig to pump
St. Louis Oil, No. 1 Williamson, Sespe, Ventura	1- 4-20	1,865	sd. sh. drlg.
Section 20 Oil, No. 1, Sespe, Ventura	20- 5-19	2,383	rd. sh. drlg.
Continental Oil, No. 10 Grubb, San Miguelito, Vent.	24- 3-24	2,130	sd. sh. drlg.
C. C. M. Oil, No. 6-A Hobson, Padre Canyon, Vent.	15- 3-24	5,426	O.S. drlg.
Ridge Oil, No. 1 Fox, Padre Canyon, Ventura	9- 3-24	7,303	recmtd. D.P.
C. C. M. Oil, No. 18-B Hobson, Rincon, Ventura	17- 3-24	4,320	O.S. drlg.
Tide Water A. O., No. 36 V. L. W., Vent. Ave., Vent.	25- 3-23	8,150	gr. sh. drlg.
Tide Water A. O., No. 40 V. L. W., Vent. Ave., Vent.	25- 3-23	3,770	sd. sh. drlg.
Tide Water A. O., No. 81 Lloyd, Vent. Ave., Vent.	27- 3-23	8,450	sd. sh. drlg.
Tide Water A. O., No. 123 Lloyd, Vent. Ave., Vent.	27- 3-23	4,596	sd. sh. drlg.
Tide Water A. O., No. 126 Lloyd, Vent. Ave., Vent.	27- 3-23	9,046	hd. sh. drlg.
Tide Water A. O., No. 128 Lloyd, Vent. Ave., Vent.	27- 3-23	7,298	hd. sh. drlg.
Tide Water A. O., No. 134 Lloyd, Vent Ave., Vent.	27- 3-23	8,339	redrlg. 4,482
Tide Water A. O., No. 7 Hartman, Vent. Ave., Vent.	22- 3-23	11,070	flow 1,440 b.d.
Shell Oil, No. 97 Taylor, Ventura Ave., Ventura	21- 3-23	5,880	sd. sh. drlg.
Shell Oil, No. 32 Edison, Ventura Ave., Ventura	21- 3-23	7,860	recmtd. 7,689
Brit. Amer. Oil, No. 7 Bolsa, Ventura Ave., Ventura	22- 3-23	6,185	sd. sh. drlg.
Lloyd Corp., No. 2 Dabney-Lloyd, Vent. Ave., Vent.	23- 3-23	7,303	P.B. 7,060
Ventura Expl., No. 1 Sexton, Ventura Ave., Ventura	30- 3-22	9,525	will P.B.
Belridge Oil, No. 27-4, North Belridge, Kern	27-27-20	8,365	O.S. drlg.
Belridge Oil, No. 35-26-A, North Belridge, Kern	35-27-20	3,970	sd. sh. drlg.
Belridge Oil, No. 26-25, North Belridge, Kern	26-27-20	5,900	br. sh. drlg.
Belridge Oil, No. 28-2, North Belridge, Kern	28-27-20	3,780	sd. sh. drlg.
Tide Water A. O., No. 23-3, North Belridge, Kern	22-27-20	2,477	sd. sh. drlg.
Tide Water A. O., No. 22, North Belridge, Kern	21-27-20	8,450	flow 200 b.d.
Eastmont Oil, No. 9-28, Round Mountain, Kern	9-28-29	1,280	sd. sh. drlg.
Hast Oil, No. 5 Kern, Kern River, Kern	34-28-28	531	O.S. drlg.
O. F. W. Oil, No. 1 Milburn, Mount Poso, Kern	27-26-28	1,414	rig to pump
Ring Oil, No. 5 Shapiro, Mount Poso, Kern	32-27-28	1,712	O.S. drlg.
Gilstrap, F. M., No. 1 Carter, Mount Poso, Kern	7-27-27	1,965	sd. sh. drlg.
Western Expl., No. 1 Hyde, Mount Poso, Kern	32-26-28	1,853	dry; abd.
Richfield Oil, No. 1, Union Avenue, Kern	5-30-28	8,480	sd. sh. drlg.
O'Reily, F., No 1 Berree, Edison, Kern	5-30-29	2,586	P.B. 2,502
Texas Co., No. 1 Lowe, Fruitvale, Kern	7-29-27	10,155	hd. sd. drlg.
West. Gulf Oil, No. 40-B, KCL, Fruitvale, Kern	22-29-27	3,831	pump 220 b.d.
Renner, G. E., No. 2 R.H.L., Sivert, Kern	27-30-30	2,300	hd. sh. drlg.
Cal. Lands, Inc., No. 1 Salisbury, Buttonwillow, Kern	7-29-24	9,632	sd. sh. drlg.
Seaboard Oil, No. 7 Kern, Buttonwillow, Kern	5-28-23	3,520	dry; abd.
Superior Oil, No. 1 Ruhl, Rio Bravo, Kern	1-29-25	11,593	cleaning out
Union Oil, No. 7-34, KCL, Rio Bravo, Kern	34-28-25	9,653	sd. sh. drlg.
General Pet., No. 3 Wagoner, Rio Bravo, Kern	35-28-25	10,690	sd. sh. drlg.
General Pet., No. 3 Van Ness, Rio Bravo, Kern	2-29-25	2,784	sd. sh. drlg.
Shell Oil, No. 58-8-A, KCL, Famosa, Kern	8-27-26	9,297	dry; abd.
Standard Oil, No. 2 Fleishauer, Greeley, Kern	20-29-26	11,903	pull liner
Standard Oil, No. 11-16, KCL, Greeley, Kern	20-29-26	7,990	sd. sh. drlg.
Standard Oil, No. 1 Elrich, Greeley, Kern	20-29-26	10,251	sd. sh. drlg.
Superior Oil, No. 12 KCL, Greeley, Kern	3-30-26	8,695	sd. sh. drlg.
Shell Oil, No. 72-29-A, KCL, Ten Section, Kern	29-30-26	8,220	flow 2,982 b.d.
Shell Oil, No. 81-29-B, KCL, Ten Section, Kern	29-30-26	2,172	sd. sh. drlg.
Shell Oil, No. 34-14-A, KCL, Canal, Kern	14-30-25	6,080	sd. sh. drlg.
Shell Oil, No. 87-4-B, KCL, Canal, Kern	4-30-25	10,140	sd. sh. drlg.
Ohio Oil, No. 10-E, KCL, Canal, Kern	14-30-25	5,496	sd. sh. drlg.
Standard Oil, No. 1 Rio Bravo fee, Canal, Kern	12-30-25	7,864	redrlg. 7,510
Richfield Oil, No. 1, KCL, Tupman, Kern	32-30-25	8,677	cleaning out
Wilbent Oil, No. 2 Royer, Midway-Sunset, Kern	7-11-23	9,005	bridge 4,496
Standard Oil, No. 223-15-D, Midway-Sunset, Kern	15-32-24	3,280	pump 158 b.d.
Standard Oil, No. 201-13-D, Midway-Sunset, Kern	13-32-24	3,255	sd. sh. drlg.
Fried, Julius, No. 1 Fried, Midway-Sunset, Kern	34-32-24	5,035	recmtd. 3,100
National Oil, No. 31 Midway, Midway-Sunset, Kern	35-32-23	1,951	O.S. drlg.
Hall-Baker, No. 1 Williams, McKittrick, Kern	2-30-21	546	sd. sh. drlg.
Richfield Oil, No. 1, KCL, Wheeler Ridge, Kern	28-11-20	9,025	looks good
Tide Water A. O., No. 2 S.P., Tejon Ranch, Kern	15-11-19	5,270	hd. sh. drlg.
Progressive Oil, No. 3 East, Coalinga, Fresno	20-19-15	302	sd. sh. drlg.
Tide Water A. O., No. 1-F North Coalinga, Fresno	1-19-15	6,931	hd. sh. drlg.
Lytle, R. S., No. 37-7-F, East Coalinga, Fresno	7-20-16	2,198	sd. sh. drlg.
Lytle, R. S., No. 71-18-F, East Coalinga, Fresno	18-20-16	150	sd. sh. drlg.
Standard Oil, No. 1-17-F Fee, East Coalinga, Fresno	17-20-16	6,691	sd. sh. drlg.
Superior Oil, No. 1 Cagle, East Coalinga, Fresno	6-20-16	5,868	sd. sh. drlg.
Superior Oil, No. 2 Fee, East Coalinga, Fresno	7-20-16	6,904	O.S. drlg.
Jarvis, L. F., No. 2 fee, West Coalinga, Fresno	14-20-14	187	sd. sh. drlg.
Pierce, C., No. 1 Shorb, Panoche, Fresno	16-14-12	1,507	idle
Dauphin Dev., No. 2 Boone, Alcalde, Fresno	30-21-14	4,470	cleaning out
Stuart Oil, No. 1 Alcalde, Alcade, Fresno	12-21-14	1,098	sd. sh. drlg.
Union Oil, No. 4 King, Kettleman North, Fresno	29-21-17	8,520	redrlg. 7,720
K.N.D.A., No. 54-24-H, Kettleman North, Fresno	24-21-16	8,905	deepening
K.N.D.A., No. 6-16-Q, Kettleman North, Kings	16-22-18	6,060	br. sh. drlg.
K.N.D.A., No. 36-16-Q, Kettleman North, Kings	16-22-18	7,885	flow 1,130 b.d.
K.N.D.A., No. 65-20-Q, Kettleman North, Kings	20-22-18	7,651	reaming
K.N.D.A., No. 36-22-Q, Kettleman North, Kings	22-22-18	5,793	br. sh. drlg.
K.N.D.A., No. 78-22-Q, Kettleman North, Kings	22-22-18	3,691	sd. sh. drlg.
Standard Oil, No. 46-13-H, Kettleman North, Fresno	13-21-16	11,030	testing
Standard Oil, No. 56-1-P, Kettleman North, Kings	1-22-17	5,959	fish D.P.
Standard Oil, No. 76-7-Q, Kettleman North, Kings	7-22-18	5,391	sd. sh. drlg.
Cal. Pet. Prod., No. 1 Irons, Cuyama, San L. Obispo	19-10-24	1,720	cleaning out
Epco, Inc., No. 1 Ajax, Union, San Luis Obispo	27-26-13	2,896	sd. sh. drlg.
Richfield Oil, No. 1 Potrero Hills, Solano	10- 4- 1	5,334	P.B. 3,238
Orestimba Oil, No. 1 Orestimba, Stanislaus	12- 7- 7	1,405	bl. sh. drlg.

IMPORTANT WELLS AND SOUTHERN CALIFORNIA WILDCATS

Company, well, location, and county—	S.T.R.	Depth	Status
Antelope Valley Oil, No. 1 Palmdale, Los Angeles	17- 6-12	1,020	sd. sh. drlg.
Mojave Pet., No. 1 Hillside, Gorman, Los Angeles	5- 8-18	477	sd. sh. drlg.
Texas Co., No. 1 Anderson, Ocean Park, Los Angeles	17- 2-15	7,285	whipstocking
Rolling Hills Pet., No. 1 Weston, Palos Verdes, L. A.	27- 4-14	5,100	idle
Amron Oil, No. 1 Lomita, Torrance, Los Angeles	23- 4-14	4,210	will P.B.
A. & T. Oil, No. 2 fee, Torrance, Los Angeles	23- 4-14	5,144	sd. sh. drlg.
Alford Oil, No. 11 Lomita, Torrance, Los Angeles	23- 4-14	5,192	O.S. drlg.
Andrews, W. P., No. 10 Kirk, Torrance, Los Angeles	23- 4-14	5,095	flow 220 b.d.
Cinco Oil, No. 1 Woodruff, Torrance, Los Angeles	23- 4-14	3,600	will deepen
D. & W. Oil, No. 4 Lomita, Torrance, Los Angeles	23- 4-14	4,691	sd. sh. drlg.
H. D. Oil, No. 1 Lomita, Torrance, Los Angeles	23- 4-14	3,807	rigged up
Hart Pet., No. 1 Neher, Torrance, Los Angeles	23- 4-14	3,800	fish liner
Kern Pet., No. 1-A Madden ,Torrance, Los Angeles	23- 4-14	5,085	O.S. drlg.
Mallon, Felix, No. 2 Martner, Torrance, Los Angeles	23- 4-14	5,136	O.S. drlg.
Medill, John, No. 4 Frenger, Torrance, Los Angeles	9- 4-14	3,595	rigged up
Pettijohn, J. F., No. 1 Marilou, Torrance, Los Ang.	23- 4-14	4,990	sd. sh. drlg.
Paso Oil, No. 1 Lyle, Torrance, Los Angeles	22- 4-14	4,951	sd. sh. drlg.
Plymouth Oil, No. 1 Lomita, Torrance, Los Angeles	23- 4-14	5,125	cmtd. 5,125
Standard Oil, No. 1-1 Marble, Torrance, Los Angeles	15- 4-14	4,986	pump 185 b.d.
Standard Oil, No. 1-2 Marble, Torrance, Los Angeles	15- 4-14	3,828	will deepen
Standard Oil, No. 2-11 Marble, Torrance, Los Ang.	22- 4-14	4,970	sd. sh. drlg.
Westside Oil, No. 1 Exeter, Torrance, Los Angeles	23- 4-14	3,835	rigging up
Wilson, Ray, No. 1 Lomita, Torrance, Los Angeles	23- 4-14	5,125	O.S. drlg.
Woolner Oil, No. 2 Lomita, Torrance, Los Angeles	23- 4-14	5,131	sd. sh. drlg.
West Basin Oil, No. 1 Eyster, Torrance, Los Angeles	23- 4-14	3,775	cleaning out
C.C.M.O., No. 15, Torrance, Los Angeles	14- 4-14	4,870	sd. sh. drlg.
C.C.M.O., No. 18, Torrance, Los Angeles	14- 4-14	5,010	cleaning out
Bush Oil, No. 1 Torino, Harbor City, Los Angeles	25- 4-14	5,224	flow 340 b.d.
D. & B. Oil, No. 2 Lomita, Harbor City, Los Angeles	25- 4-14	5,244	flow 170 b.d.
General Pet., No. 1 Poggi, Harbor City, Los Angeles	25- 4-14	3,836	cleaning out
General Pet., No. 12 Poggi, Harbor City, Los Ang.	25- 4-14	5,100	cleaning out
Macrate, A. N., No. 2 Kupfer, Harbor City, Los Ang.	25- 4-14	2,998	sd. sh. drlg.
O'Donnell, J. L., No. 44 Oakley, Harbor City, Los A.	30- 4-13	5,218	O.S. drlg.
Richfield Oil, No. 1 Capitol, Harbor City, Los Ang.	30- 4-13	5,301	P.B. 5,230
Ring Oil, No. 19-1 Block, Harbor City, Los Angeles	25- 4-14	....	bldg. rig.
Sunset Oil, No. 2 Security, Harbor City, Los Angeles	25- 4-14	2,687	sd. sh. drlg.

KEY TO ABBREVIATIONS USED IN DRILLING REPORTS

Abd., abandoned.
Acd., acidized.
B.O., barrels of oil.
B.P.D., barrels per day.
B.D., barrels daily.
B.P., back pressure.
B.R., building rig.
Br. sh., brown shale.
B.S., basic sediment
C.&P., cellar and pits
Cd. or Crd., cored.
C.D., corrected depth
Cg., coring.
Cmtd., cemented.
C.O., cleaning out.
Comp., completed.
Compr., compressor.
C.P., casing pressure, also cement through perforations.
Csg., casing.
D.D., drilling (or drilled) deeper.
Drlg. or Drg., drilling.
Drk. or Dk., derrick.
D.S., drill stem.
D.&A., dry and abandoned.
Fsg., fishing.
Gbo., gumbo.
G.I., gas injection.
Gr., gravity.
Gr. sd., gray sand.
Grn. sh., green shale.
Hd. sd., hard sand.
H.F.W., hole full of water.
I.P., initial production.
L., lime.
L.D.D., later drilled deeper.
Lnr., liner.
Loc., location.
M.I.M., moving in material.
M.I.R., moving in rig.
M.I.R.T., moving in rotary tools.
M.O.T., milling on tools.
O.I.H., oil in hole.
O.S., oil sand.
O.T.D., old total depth.
O.W.D.D., old well drilling deeper.
O.W.P.B., old well plugging back.
P.B., plugging or plugged back.
P.B.P., pulling or pulled big pipe.
P.L., pipe line.
P.L.O., pipe line oil.
Pmpg., pumping.
P.O.P., putting on pump.
P.P., pulled pipe.
Rd. sd., red sand.
Rd. sh., red shale.
Recmt., recemented.
Rmg., reaming.
Redrlg., redrilling.
Rng., running.
R.O.G., rig on ground.
R.P., rock pressure.
R.U., rigging up.
R.U.R., rigging up rotary.
R.U.S.T., rigging up standard tools.
R.&T., rods and tubing.
S. or Sd., sand.
S.D., shut down.
Sdy. sh., sandy shale.
Sdtr., or St., sidetracking.
S.D.P.L., shut down for pipe line
S.D.O., or S.D.W.O., shut down awaiting orders.
S.G., show gas.
Sh.&L., shale and lime.
S.I., shut in.
S.I.P., shut in, prorated.
S.L.M., steel line measurement.
S.O., show oil.
S.O.G.&W., show of oil, gas and water.
Spdg. or Spd., spudding.
S.R., straightreaming.
Stdg., standardizing (also standing)
S.W., salt water.
Swbg., swabbing.
T.A., temporarily abandoned.
Tbg., tubing.
T.D., total depth.
T.P., tubing pressure.
Tr., tract.
U.R., underreaming.
W.I.H., water in hole.
W.O., workover.
W.O.C. or W.O.C.S., waiting on cement to set.
W.P., working pressure.
W.S.O., water shutoff.
W.S.S.O.K., water shut off O.K.
W.S.R. or W.O.S.R., awaiting standard rig.
Wtr., water.

Texas Co., No. 2 Oakley, Harbor City, Los Angeles	30-	4-13	5,891	sd. sh. drlg.
West. Talc., No. 1 Pierce, Harbor City, Los Angeles	25-	4-14	5,325	pump 75 b.d.
Union Oil, No. 65 Callender, Dominguez, Los Ang.	32-	3-13	7,114	sd. sh. drlg.
Union Oil, No. 49 Hellman, Dominguez, Los Angeles	33-	3-13	8,725	sd. sh. drlg.
Shell Oil, No. 11 Reyes, Dominguez, Los Angeles ..	33-	3-13	4,426	redrlg. 4,295
Shell Oil, No. 97 Reyes, Dominguez, Los Angeles ..	33-	3-13	2,171	sd. sh. drlg.
Richfield Oil, No. 1 Estate, Dominguez, Los Angeles	2-	4-13	6,860	sd. sh. drlg.
Entrikin, W. E., No. 1-D West, Athens, Los Angeles	7-	3-13	5,770	br. sh. drlg.
Fairfield, F. E., No. 1 Abel, Rosecrans, Los Angeles	19-	3-13	7,698	O.S. drlg.
O'Donnell, J. L., No. 46 Mail, Rosecrans, Los Angeles	19-	3-13	6,030	sd. sh. drlg.
Bankline Oil, No. 1 Kirby, Rosecrans, Los Angeles..	20-	3-13	7,655	redrlg. 7,330
Barnsdall Oil, No. 10 Rosecrans, Rosecrans, Los A.	20-	3-13	8,215	tested wet
Union Oil, No. 27 Rosecrans, Rosecrans, Los Angeles	19-	3-13	7,177	sd. sh. drlg.
Union Oil, No. 29 Rosecrans, Rosecrans, Los Angeles	19-	3-13	5,830	sd. sh. drlg.
Union Oil, No. 30 Rosecrans, Rosecrans, Los Angeles	19-	3-13	1,010	sd. sh. drlg.
Universal Cons'd., No. 6 Trust, Rosecrans, Los A.	18-	3-13	7,575	cleaning out
Universal Cons'd., No. 14 Trust, Rosecrans, Los A.	18-	3-13	3,498	sd. sh. drlg.
Superior Oil, No. 12 Maxwell, Rosecrans, Los A.	19-	3-13	8,390	sd. sh. drlg.
Hydrocarbon Prod., No. 1 Cole, Rosecrans, Los A.	19-	3-13	6,850	sd. sh. drlg.
Hydrocarbon Prod., No. 1 Duchess, Rosecrans, L. A.	20-	3-13	3,498	sd. sh. drlg.
Royalty Ser., No. 3 Gordon, Rosecrans, Los Angeles	18-	3-13	3,990	sd. sh. drlg.
West. Gulf Oil, No. 1 Bagg, Rosecrans, Los Angeles	17-	3-13	7,930	gr. sd. drlg.
Barnsdall Oil, No. 4 R.S.F., Newhall, Los Angeles	26-	4-17	7,193	O.S. drlg.
Continental Oil, No. 1 R.S.F., Newhall, Los Angeles	20-	4-17	2,430	sd. sh. drlg.
Newhall Associates, No. 4 Needham, Newhall, L. A.	13-	3-16	3,504	redrlg. 3,254
Mojave Pet., No. 2 Jennings, Newhall, Los Angeles	33-	5-14	430	sd. sh. drlg.
Mangrum & Page, No. 1 Lintz, Newhall, Los Angeles	4-	3-15	161	hd. sd. drlg.
O'Donnell, J. E., No. 1 Hammond, Newhall, Los A.	8-	3-16	4,305	rigged up
Royal Lands, No. 1 Ramona, Castaic, Los Angeles	8-	4-17	1,320	sd. sh. drlg.
General Pet., No. 30 Harbor, Wilmington, Los A.	2-	5-13	3,880	O.S. drlg.
General Pet., No. 31 Harbor, Wilmington, Los A.	2-	5-13	3,850	flow 365 b.d.
General Pet., No. 14 S. P., Wilmington, Los Angeles	2-	5-13	1,954	sd. sh. drlg.
Allied Pet., No. 30 Harbor, Wilmington, Los Angeles	35-	4-13	3,990	sd. sh. drlg.
Getty Oil, No. 4-W Wilmington, Los Angeles	33-	4-13	5,693	flow 310 b.d.
Hollywood Oil, No. 5 Baxter, Wilmington, Los A.	33-	4-13	3,472	sd. sh. drlg.
Master Pet., No. 1 Chuck, Wilmington, Los Angeles	35-	4-13	5,762	tested wet
Union Pacific R.R., No. 94, Wilmington, Los Angeles	4-	5-13	5,660	reaming
Union Pacific R.R., No. 95, Wilmington, Los Angeles	4-	5-13	2,855	sd. sh. drlg.
Union Pacific R.R., No. 96, Wilmington, Los Angeles	4-	5-13	2,950	sd. sh. drlg.
Union Pacific R.R., No. 100, Wilmington, Los Ang.	3-	5-13	3,963	sd. sh. drlg.
Universal Cons'd., No. 6 Newport, Wilmington, L. A.	2-	5-13	4,153	sd. sh. drlg.
Grady, R. T., No. 1 Associates, San Pedro, Los A.	23-	5-14	595	sd. sh. drlg.
Hogan Pet., No. 2 Burkhard, San Pedro, Los Angeles	6-	5-13	3,734	dry; abd.
Seacliff Pet., No. 1 Club, Montebello, Los Angeles..	3-	2-12	715	cmtd.
Olympic Refining, No. 1 Smith, Montebello, Los A.	2-	2-12	4,543	sd. sh. drlg.
St. Helens Pet., No. 28 Monterey, Montebello, L. A.	2-	2-12	6,670	sd. sh. drlg.
Standard Oil, No. 2 Braun, Montebello, Los Angeles	2-	2-12	3,815	deepening
Standard Oil, No. 4 Braun, Montebello, Los Angeles	2-	2-12	1,760	sd. sh. drlg.
Union Oil, No. 1 Calkins, Montebello, Los Angeles	2-	2-12	6,050	sd. sh. drlg.
Union Oil, No. 4 Howard & Smith, Montebello, L. A.	2-	2-12	3,470	sd. sh. drlg.
Pongratz Pet., No. 1 Martin, Montebello, Los A.	2-	2-12	6,700	recmtd. 6,636
McVicar & Rood, No. 3 Manz, Montebello, Los A.	2-	2-12	2,584	sd. sh. drlg.
Mont. Wesco, No. 1 Mont., Montebello, Los Angeles	2-	2-12	6,693	sd. sh. drlg.
Brookline Oil, No. 1 Drake, Montebello, Los Angeles	2-	2-12	6,705	completing
Texas Co., No. 6 Baldwin, Santa Fe Springs, Los A.	6-	3-11	5,570	sd. sh. drlg.
Johnston Drlg., No. 36, North Long Beach, Los A.	13-	4-13	4,538	rig to pump
Massey & Asso., No. 1 Taylor, Long Beach, Los A.	19-	4-12	4,745	reaming
De Soto Oil, No. 1 Signal, Long Beach, Los Angeles	30-	4-12	10,157	flow 250 b.d.
Parry & Co., No. 1 Associates, Long Beach, Los A.	19-	4-12	4,400	sd. sh. drlg.
Brea Canyon Oil, No. 49 Brea, Brea Canyon, Orange	2-	3-10	2,880	hd. sd. drlg.
Shell Oil, No. 20 Orange, Brea Canyon, Orange .	2-	3-10	6,240	sd. sh. drlg.
Battersby, J. M., No. 1 Associates, Carmenita, Orange	21-	3-11	8,965	gr. sh. drlg.
Graham-Loftus Oil, No. 2 Perkins, E. Coyote, Orange	13-	3-10	3,386	P.B. 3,360
Bartholomae Oil, No. 7 Sterns, E. Coyote, Orange..	22-	3-10	4,800	cmtd. 4,790
Shell Oil, No. 1 Dunford, Richfield, Orange	22-	3- 9	1,835	sd. sh. drlg.
Goodrich Oil, No. 1 Paige, Richfield, Orange	22-	3- 9	3,140	sd. sh. drlg.
J.E.F. Oil, No. 1 Bruce, Huntington Beach, Orange	36-	5-11	4,424	pump 150 b.d
Southwest Expl., No. 3 State, Huntington B., Orange	10-	6-11	3,727	sd. sh. drlg.
Southwest Expl., No. 4 State, Huntington B., Orange	10-	6-11	3,550	sd. sh. drlg.
Shell Oil, No. 1 Irvine, Del Mar, Orange	6-	7- 9	2,496	sd. sh. drlg.
Dauphin Dev., No. 1 Irwin, Ponto, San Diego	16-12-	4	506	fish D.P.
Palm City Oil, No. 1 Palm City, San Diego	21-18-	2	181	sd. sh. drlg.
So. Count. Pet., No. 1 Serranos, San Bernardino ..	22-	2- 8	2,770	sd. sh. drlg.

KANSAS

Week Ending December 17 (Descriptions are East unless marked otherwise)

Barton County

Amerada Pet. Co. No. 1 Kruckenberger, C NE NE Sec. 14-19-15w. Drlg.

C. L. Carlock and Atlantic Ref. Co. No. 1 Demel, NE NW Sec. 30-17-13w. Rng. csg. 3,418 ft.

Long & Johnson No. 1 Eveleigh, SW SW NE Sec. 3-18-14w. Lansing 3,100 ft.; Arb. 3,338 ft.; 2,000 ft. O.I.H.

I. W. Murfin No. 1 Birzer, NE SW Sec. 21-19-11w. Drlg. 2,100 ft.

Newton & Clyde Pulse No. 1 Hagen, SW Sec. 20-20-11w. T.D. 3,330 ft.; P. 223 B.O. in 8 hrs.; pot. 669 B.O.; comp.

Sinclair-Prairie No. 1 Prusa, SE SE SE Sec. 20-16-11w. Arb. 3,335-52 ft.; pmp. 478 B.O. in 8 hrs.; pot. 1,313 B.O.P.D.; comp.

Virginia Drlg. Co. No. 1 Clawson, SW NW Sec. 17-20-11w. Lans. 3,054 ft.; Arb. 3,285 ft.; R.U.S.T. 3,295 ft.

Butler County

Higgens & Pierce No. 1-A Shrieves, NE NW SE Sec. 2-26-4. Drlg. 150 ft.

Simpson & Estes No. 1 Farm, SE NE NE Sec. 30-27-7. Drlg. 400 ft.

Cowley County

Barnsdall No. 1 Snodgrass, NW SE Sec. 36-30-6. Drlg. 580 ft.

Ben Graiapp et al No. 1-A Clark, NW NW NE Sec. 11-31-3e. Rng. csg. 2,630 ft.

Dickinson County

Franks et al No. 1 Huffman, NW SW Sec. 11-13-1. Drlg. 1,410 ft.

Ellis County

C. L. Carlock No. 1 Philip, SE SW NE Sec. 10-15-17w. Drlg. 750 ft.

Cities Service No. 1 Hall "D," C NW Sec. 2-12-17w. Arb. 3,593 ft.; R.U.S.T. 3,602 ft.

Darby Pet. No. 1 Peavey, NW NE Sec. 24-11-18w. T.D. 3,439 ft.; retreated and swb. 45 B.O. in 4 hrs.

Graham County

Continental Oil Co. No. 1 Putnam Inv. Co., CWL SW Sec. 3-9-21w. Drlg. 3,050 ft.

Greenwood County

Russell B. Reed No. 1 Shell, NW SE Sec. 17-28-11e. T.D. 1,210 ft.; P. 15 B. O.P.D.; comp.

Harvey County

Lanahan Drlg. No. 1 Lagree, SE SE Sec. 4-23-3w. T.D. 280 ft.; S.D.

Kingman County

Bunte Bros. No. 1 Shepard, SE SE SE Sec. 10-27-10w. T.D. 4,529 ft.; P.B. 4,086 ft.; pmp. 50 B.O.P.D.; comp.

Duwe & Farris No. 1 Kimminan, NE NW SW Sec. 12-30-8w. Drlg. 4,530 ft.

McPherson County

Maryiyn Oil No. 1 Dixon, NW NE NW Sec. 7-19-2w. W.O.C. 3,010 ft.; 1,750 ft. O.I.H.

Marion County

Cox & McGinnis and Saco Oil Co. No. 1 Jolliffe, C S½ SW SE Sec. 2-22-5. H.F.W. 2,457 ft.

Johnson et al No. 1-A Miltz, SW SW SW Sec. 24-17-4. T.D. 2,380 ft.; 300 ft. O. I.H.

Mead County

Pacific Midwest Oil No. 1 Rexford, NE SE SW Sec. 8-30-29w. S.D. 1,435 ft.

Osage County

J. M. Edwards No. 1 Detrick (O.W.D.D.), NW SE Sec. 21-14-15. O.T.D. 1,200 ft.; C.O. 1,130 ft.

Ottawa County

Babcock Oil No. 1 Copeman, NW NW Sec. 18-10-2w. H.F.W.; U.R. 2,930 ft.

Pratt County

Champlin Ref. Co. No. 1 Elliott, SW NE Sec. 26-27-14w. Fsg. 4,857 ft.

Rice County

Cities Service No. 1 DeWitt, CSL NE Sec. 33-19-9w. Drlg. 1,815 ft.

Cities Service No. 1 Murphy, CWL NE Sec. 9-19-9w. Drlg. 3,198 ft.

Garden Prod. L. Werner, NE NE NE Sec. 10-21-9w. Arb. 3,424-43 ft.; N.S.; D.&A.

Spurrier & Bruce No. 1 Cary, NE NW NW Sec. 30-18-8w. O.W.D.D.; O.T.D. 1,530 ft.; S.D. 1,680 ft.

J. H. Tatlock No. 1 L. C. Proffitt, SW SE SW Sec. 12-20-10w. Rng. csg. 3,318 ft.

Rooks County

Phillips Pet. Co. No. 1 Tanzey, C NW SW Sec. 25-8-18w. Arb. 3,418-3,423 ft., T.D. 3,424 ft.; acd. and swb. 21 B.F.

Producers No. 1 Ham (O.W.D.D.), SW NW Sec. 25-7-19w. O.T.D. 1,800 ft.; drlg. 2,775 ft.

Russell County

K. F. Nelson No. 1 Polcyn, SW Sec. 31-13-15w. C.O. 2,855 ft.

Phil-Han No. 1 Weimeister, SW Sec. 19-14-13w. Top pay 2,655 ft.; perf. and acd. and swb. ½ B.O.P.H.; to P.B.

W. I. Southern No. 1 Sellens, SW cor. Sec. 22-15-13w. Arb. 3,352-54 ft.; shot 3,188-96 ft.; acd. and P. 45 B.O. and 70 B.W. in 8 hrs.

Earl Wakefield No. 1 Meharg, SE SE SE Sec. 16-15-13w. Drlg. 545 ft.

Yankey & Stearnes No. 1 Krog, NW NE NW Sec. 7-15-13w. Top pay 3,324-27 ft., T.D.; to P.B.

Saline County

Central States Oil Co. No. 1 Crawford, NW SW NE Sec. 26-13-3w. Drlg. 1,100 ft.

Sedgwick County

Frank Hudson et al No. 1 Fulton, NE SE Sec. 35-28-1e. U.R. 2.356 ft.

Stafford County

Stanolind O. & G. Co. No. 1 Curtis, SE cor. Sec. 31-21-12w. Viola 3,544 ft. Arb. 3,638 ft.; R.U.S.T. 3,640 ft.

Sumner County

Cameron & Spencer No. 1 Frey, NW cor. Sec. 5-30-1e. Drlg. 3,850 ft.

Earl Henderson No. 1 King, NE NE NE Sec. 22-31-4. U.R. 1,775 ft.

Wabaunsee County

Fowler & Tague et al No. 1 Aye, NW SW NW Sec. 10-12-8. S.D. 900 ft.

Woodson County

M. J. Trott No. 1 Abbott, NW NE NE Sec. 21-25-14e. Drlg. 1,325 ft.

OKLAHOMA

Week Ending December 17

NORTHERN OKLAHOMA

Caddo County

Texas Co. No. 1 Smith, C NE NW Sec. 2-5-12w. T.D. 2,556 ft.; S.D.O.

Cleveland County

Burke-Greis No. 1 Alberts, SE SW NW Sec. 19-7-1w. Drlg. 3,178 ft.

Harper, Turner et al No. 1 Taylor, SE NE NW Sec. 23-8-2w. Drlg. 5,760 ft.

Neis-Burrton No. 1 Hirsch, NW NW NE Sec. 17-9-2w. O.W.P.B.; O.T.D. 7,692 ft.; T.D. 7,695 ft.; drlg. on swab.

Coal County

Patsy Oil Co. No. 1 Spence, NW SE SE Sec. 19-2-8. S.S.O. 4,169-74 ft.; drlg. 4,630 ft.

Garfield County

Champlin Ref. Co. No. 1 Boehm, SW SW NE Sec. 4-24-8w. Viola 6,595 ft.; dolo. 6,625 ft.; 1st Wilcox 6,658 ft.; dry; 2nd Wlx. 6,690 ft.; F. 219 B.O. and 267 B.W. in 24 hrs.

Garvin County

H. R. Hollenbach et al No. 1 Butterly, NE NE SE Sec. 22-1n-1e. 3,218,000 ft. gas; drlg. 3,205 ft.; S.D.; repairs.

Grady County

Carter Oil Co. et al No. 1 Smith C-58, C SE SW Sec. 26-5-8w. S.S.O. 5,329-58 ft.; S.O. 5,433 ft.; cd. 5,964-76 ft.; rec. sh.; drlg. 6,055 ft.

L. W. Wrinkler No. 1 Chapman, SE SE NE Sec. 23-4-6w. T.D. 2,805 ft.; S.D.

Greer County

S. T. Moore No. 1 Graumann, NE NW NW Sec. 11-5-21w. T.D. 550 ft.; S.D.

Hughes County

City of Holdenville No. 1 Fairgrounds, SE SE SE Sec. 13-7-8. T.D. 1,200 ft.; D.&A.

Homer Doup et al No. 1 Bond, NE NE SW Sec. 7-7-9. S.D. 3,098 ft.

Phillips Pet. Co. No. 1 Mandler, SE SW SW Sec. 1-6-10. Viola 5,357 ft.; dolo. 5,435 ft.; cg. 5,510 ft.

Jackson County

Lippert No. 1 Howard, NE SW NW Sec. 10-3-19w. O.W.D.D. T.D. 1,510 ft.; S.D.

Kay County

Crawford No. 1 Boehl, SE SE NW Sec. 34-27-2w. S.D. 1,000 ft.

C. C. Nye No. 1 Wolfenbarger, SW NW SW Sec. 16-27-4. Drlg. 1,065 ft.

Kingfisher County

Burton Pet. Corp. No. 1 Zerger, C SE SW Sec. 5-18-6w. S.D. at 3,510 ft.; lost cones.

Ace Gutowsky No. 1 Lankford, NE NE SE Sec. 34-17-6w. Drlg. 790 ft.

Kiowa County

Crawford & Zelliff No. 1 Kimray, SW SW NW Sec. 36-5-18w. S.D. 354 ft.

R. L. Emerson No. 1 Handcock, SE SE NE Sec. 26-6-15w. Drlg. 520 ft.

Hughes & Reese No. 1 Fultz, SE SE SE Sec. 10-6-18w. T.D. 1,238 ft.; W.O.C.

Muskogee County

Heydrick No. 1 Paschall, NE SE NW Sec. 22-13-19. S.D. 1,430 ft.

Noble County

Phillips Pet. Co. No. 1-A Robertson, NW NE SW Sec. 29-24-1w. T.D. 4,568 ft.; D.&A.

Okfuskee County

Lease Inv. Co. No. 1 fee, SE SW SE Sec. 21-13-10. T.D. 3,615 ft.; P.B. 3,612 ft.; P. 70 B.O. and 60 B.W. in 24 hrs.; comp.

Mead Prod. Co. No. 1 Pine, SW SW NW Sec. 14-12-11. T.D. 2,848 ft.; rig burned down.

Okmulgee County

Jim Wise Drlg. Co. No. 1 Morrow, SW NW NE Sec. 16-15-13. S.D.; wtr. 100 ft.

Pawnee County

Ed Kelly No. 1 Hill, SW SW SE Sec. 1-21-5. U.R. 1,280 ft.

Payne County

Starr O. & G. Co. No. 1 Georgia, SE SW NE Sec. 35-18-4. Drlg. 1,400 ft.

Roy Starr No. 1 McKenzie, SW SW NE Sec. 13-18-3. Drlg. 4,064 ft.

Pittsburg County

Supreme Oil Corp. No. 1 Hickey, NW SW NW Sec. 4-2-15. T.D. 1,040 ft.; S.D.

Supreme Oil Corp. No. 1 Stevenson, SW SW SE Sec. 27-3-14. T.D. 1,300 ft.; M.I. rotary.

Pontotoc County

J. L. Casey No. 1 Pace, SW SW NE Sec. 14-2-7. S.D. 1,105 ft.

H. Z. Moore No. 1 Payne, SE NW SE Sec. 16-4-4. T.D. 997 ft.; S.S.O.; S.D.

Union Dev. Co. No. 1-A Abbott, SW NW NE Sec. 34-3-6. Drlg. 4,100 ft.

Pottawatomie County

Hall & Briscoe No. 1 Merkle, NW NW SE Sec. 32-8-5. 1st Wlx. 4,385 ft.; 2nd 4,460 ft.; T.D. 4,476 ft.; P.B. 4,386 ft.; P. 6 B.O. in 24 hrs.; S.D.O.

Wood Oil Co. No. 1 Peters, SW SE NW Sec. 28-8-4. Drlg. 1,000 ft.

Seminole County

Lesslie Rogers No. 1 Kidd, NE SW SE Sec. 33-10-8. T.D. 200 ft.; S.D.

W. C. Wood No. 1 Aldridge, SW NW NE Sec. 5-8-8. S.D. 400 ft.

Sequoyah County

Thompson Brs. No. 1 Ruby, NW NW NE Sec. 30-12-22. S.D. 100 ft.

Stephens County

Phillips Pet. Co. No. 1 Culbertson, NW NW SE Sec. 4-1-5w. T.D. 350 ft.

Texas County

Republic Nat. Gas Co. No. 1 Dulabohn, C Sec. 21-6n-15ecm. Drlg. 2,365 ft.

Republic Nat. Gas Co. No. 1 Judd, CSL SW Sec. 24-6n-15ecm. T.D. 2,870 ft.; gas 7,100,000 ft.

Washita County

Continental Oil Co. No. 1 Proctor, C NW Sec. 28-10-20w. Rmg. at 6,895 ft.; to run 9-in. csg.; T.D. 10,195 ft.

L. B. McWhirter No. 1 fee, NW SW SW Sec. 34-8-19w. T.D. 2,186 ft.; S.D.

SOUTHERN OKLAHOMA

Carter County

Pure Oil Co. No. 1 Noble, NE SE Sec. 35-3s-1e. Drlg. sh. 3,585 ft.

Choctaw County

Clyde Ross et al No. 1 Hardy, SE SE NW Sec. 21-7s-15. Drlg. sdy. L. 1,300 ft.

Cotton County

Jim Turner No. 5 Collins, C NE NE Sec. 18-4s-10w. S.S.O. 1,237 ft., sd.; T.D.; S.D.

Tillman County

Smith No. 2 Hammel, NE NW NW sec. 6-5s-15w. T.D. 2,380 ft.; recvd. D.P. and S.D.

ARKANSAS

Calhoun County

J. E. Murdock No. 1 Southern Craft Corp., SE. cor. NW NW sec. 17-14-13. Top Nac. 2,372 ft.; top Tokio 2,920 ft. S.D. 3,291 ft.; arng. to dpn.

Columbia County

Atlantic Ref. Co. No. 1 Barnette, C SW SE Sec. 14-17-20. 10¾-in. csg. 2,250 ft.; drlg. sh. 2,680 ft.

Normandie Oil Corp. No. 1 L. Garrett, C NE NE Sec. 23-17-20. 9⅝-in. csg. 2,230 ft.; drlg. sh.&L. 4,440 ft.

Pet. Finance Co. No. 1 Barnett, C NW SE Sec. 14-17-20. T. Bknr. L. 7,378 ft.; T. Smkvr. L. 7,478 ft.; cg. 7,492 ft.

Pet. Finance Co. No. 1 Garrett, C SW SW Sec. 13-17-20. M.I. rig.

Southwood Oil Co., Inc., No. 1 L. Garrett, C SW SW Sec. 13-17-20. T. Bknr. L. 7,295 ft.; T. Smkvr. L. 7,358 ft.; cg. 7,449 ft.

Standard Oil Co. of La. No. 4 McKean, SW cor. NW SW Sec. 8-16-22. T. Buckner 6,947 ft.; T. P. 7,207 ft.; cd. soft sat. L. 7,217-27 ft.; 6-in. csg. 6,212 ft.; T.D. 7,255 ft.; F. 27 B.P.H., ½-in. ck.; T.P. 90 lbs.; C.P. 100 lbs.

Standard Oil Co. of La. No. 1 Minnie Harris, NE cor. NE SW Sec. 15-17-19. Drlg.

Tide Water Seaboard No. 1 Beene, C SE NW Sec. 15-18-19. Top Cotton Valley 5,887 ft.; cd. 7,000-08 ft.; rec. 4 ft. sd. &sh.; stain oil; cd. 7,020-32 ft.; rec. 1 ft. wtr. sd. and 6 jts. gr. sd.&sh.; no show; cd. S.O. 7,305-10 ft.; cd. 7,997-8,005 ft.; rd. sd.&sh.; cd. T. por. L. 8,201 ft.; B. por. L. 8,226 ft.; cd. to 8,327 ft. and drld. to 8,332 ft.; set 7-in. csg. 8,291 ft.; perf. 8,212-20 ft. with 50 shots; T.D. 8,312 ft.

Hot Spring County

John H. James No. 1 Sturgess Lbr. Co., SW cor. SW SE Sec. 24-6-18. 10-in. csg. 58 ft.; W.O.C. 63 ft.

Lafayette County

Shell Pet. Corp. & Ohio Oil Co. No. 1 Warren, C SE SE Sec. 13-16-24. 13⅜-in. 194 ft.; 9⅝-in. 2,272 ft.; drlg. hd. L.&sh. 5,072 ft.

Wadley-Erwin et al No. 1 G. W. Taylor, C NE SW Sec. 15-19-26. 13⅜-in. csg. 447 ft.; drlg. chk. 2,430 ft.

Little River County

Barbee et al No. 1 Ada Mills, SE cor. SW NW Sec. 18-12-29. R.U.

C. & M. Drlg. Co. No. 1 Strawn, SW cor. SE Sec. 20-10-32. S.D. 1,170 ft. hd. sd.

Harford Oil Corp. No. 1 Pinning, C NE NE SW Sec. 6-13-30. S.D.; W.O. 1,825 ft.

Joe G. Strahan et al No. 2 Dierks Lbr. Co., Sec. 21-12-28. S.D. 3,395 ft.

Lonoke County

Cabot Drlg. Club, Inc., No. 1 Benson Townsite, Sec. 18-4n-9w. Set 4½-in. csg. on pkr. 1,540 ft.; S.D. 2,406 ft.

J. W. Eddington No. 1 Anderson. S.D. 900 ft.

Lonoke-Prairie Dev. Co. No. 1 T. Young, C NW NW Sec. 8-3n-7w. D.S. stuck 736 ft.

Miller County—Rodessa

Gerhig Co. No. 2 Watson, SE cor. N SE Sec. 2-20-28. 9⅝-in. csg. 970 ft.; drlg. sh. 3,115 ft.

Gulf Ref. Co. No. 5 Johnson, SW cor. Sec. 29-15-15. R.U.

Lyons & Merritt Oil Co. No. 1 E. B. Mitchell, SE cor. NE SW Sec. 2-20-28. Drlg. sh.&L. 4,630 ft.

F. W. Martin Drlg. Co. No. 1 Bloomburg State Bnk., C SE NE Sec. 2-20-28. Set 9⅝-in. csg.; drlg. sh. 3,225 ft.

F. W. Martin No. 2-A Watts, 335 ft. E, 330 ft. N, SW cor. SW NE Sec. 2-20-28. Loc.

F. W. Martin Drlg. Co. No. 3 Watts, C S NW NW Sec. 1-20-28. R.U.

Mrs. S. O. Thompson No. 1 Gen. Am. Life Ins. Co., SE cor. SE SW Sec. 20-14-26. Cd. 3,657 ft.; slightly por. sdy. L.; D.S. stk.; T.D. 3,825 ft.; D.S.T. 3,677-95 ft.: tstd. 15 thribbles S.W.; 8 min.; S.D.; W.O.; 3,851 ft.

Mississippi County

Benedum & Trees Oil Co. No. 1 Mack. 330 ft. SW cor. NW SW Sec. 2-15n-12e. Top Nac. 2,160 ft.; set 7-in. csg. 2,897 ft.; drlg. hd. gr. L. 3,516 ft.

Nevada County

Texas Canadian Oil Corp. No. 2 Stocks, NW SW SE Sec. 9-15-22. Cor. T.D. 1,395 ft.; 7-in. 1,340 ft.; perf. csg. 1,395 ft.; recmtd. csg. and ripped csg. 1,208-15 ft.; T. Nac. 1,202 ft.; comp.; pmpg. 25 B.O. and 100 bbls. S.W. per day.

Texas Canadian Oil Co. No. 3 Stocks, C SW NE Sec. 9-15-22. 10-in. csg. 20 ft.; 7-in. csg. 1,341 ft.; T. Nac. 1,183 ft.; W.O.C. 1,350 ft.

O. F. Whittaker No. 1 Edwards, Sec. 3-15-20. Cd. brkn. sd.; S.O. 2,030-2,155 ft. set 6¼-in. csg. 2,030 ft.; comp.; pmpg. 5 B.O.P.B.

Pulaski County

A. L. Kitselman No. 2 A. L. Kitselman, Jr., SE SE SW Sec. 2-1s-13e. D.&A.; T.D. 4,080 ft.; in slate.

Union County—Schuler

Delta Drlg. Co. No. 1 Powledge, SW cor. NW NW Sec. 21-18-17. Top Jones sd. 7,599 ft.; cd. to 7,651 ft. and drld. to 7,686 ft.; 7-in. csg. 7,678 ft.; perf. csg. 7,609-22 ft. and 7,626-31 ft.; no flow; set 2-in. pkr. 7,600 ft.; no flow; S.I. and W.O.; C.P. 1,100 lbs.; T.D. 7,686 ft.; flw. by heads through csg. and tbg.; no chokes; est. 110 B.P.D.; comp.; made 207 B.O. in 24 hrs.; open tbg. or csg.

E. M. Jones No. 3-B Murphy Ld. Co., SW cor. SE NE Sec. 13-18-18. Drlg. T. Jones sd. 7,508 ft.; cg. 7,600 ft.

Lion Oil Ref. Co. No. 3 Dee, SW NW Sec. 17-18-17. Set 10¾-in. csg. 1,884 ft.; cd. T. Jones sd. 7,551 ft.; T.D. 7,664 ft.; comp.; flwd. 32 B.P.H.; ½-in. tbg. ck.; T.P. 275 lbs.; C.P. 400 lbs.

Lion Oil Ref. Co. No. 5 Marcus, Sec. 18-18-17. Top Jones 7,511 ft.; cd. top L. 7,607 ft.; T.D. 7,725 ft.; set 7-in. csg. 7,689 ft.; comp.; perf. 7,652-56 ft. with 30 shots; flwd. 30 B.O.P.H.; ¼-in. ck.; T.P. 1,100 lbs.; C.P. 925 lbs.

Lion Oil Ref. Co. No. 6 Marcus, C Lot 3, SW Sec. 18-18-17. Set 16-in. csg. 114 ft.; 10¾-in. csg. 1,950 ft.; drlg. shly. sd. 3,727 ft.

Lion Oil Ref. Co. No. 6 Marine, NW cor. SW NW Sec. 18-17-17, T. Jones sd. 7,536 ft.; cd. to 7,588 ft.; T.D. 7,598 ft. comp.; flwd. 45 B.O.P.H.; 1-in. ck.; T.P. 150 lbs.; C.P. 0; perf. 7,540-65 ft. with 129 shots.

Lion Oil Ref. Co. No. 7 Mayfield, C Lot 2, NW Sec. 18-18-17. Cd. T. L. 7,631 ft.; T.D. 7,658 ft.; set 7-in. csg. 7,718 ft.; W.O.C.

Lion Oil Ref. Co. No. 4 Nelson, SW cor. Lot 5, SW Sec. 18-18-17. L. 7,672-98 ft.; T.D. 7,720 ft.; 7-in. csg. 7,616 ft. comp.; perf. csg. 7,590-7,610 ft. with 100 shots; flwd. 30 B.O.P.H.; 1-in. tbg. ck.; T.P. 200 lbs.; C.P. 600 lbs.

Lion Oil Ref. Co. No. 3 Sewell, NE cor. Lot 4, NW Sec. 18-18-17. 10¾-in. csg. 1,955 ft.; drlg. rd. sh. 3,820 ft.

Marine Oil Co. No. 3 Calloway, SE cor. S½ Lot 4, NW Sec. 18-18-17. T. L.; cd. 7,635-80 ft.; T. Jones sd. 7,531 ft.; T. D. 7,735 ft.; 7-in. csg. 7,721 ft.; W.O.C.

C. H. Murphy No. 1 fee, SE cor. SW NE Sec. 13-18-18. Cd. top Jones sd. 7,534 ft.; T. L. 7,627 ft.; T.D. 7,695 ft.; 7-in. 7,679 ft.; comp.; 173 B.P.D.; 10/64-in. ck.; T.P. 1,075 lbs.; C.P. 1,100 lbs.; perf. 7,565-95 ft.

C. H. Murphy et al No. 2 fee, NW cor. SW SE Sec. 13-18-18. Drlg. sh. 2,250 ft.

Phillips Pet. Co. No. 1 Amanda, SE cor. NE SE Sec. 12-18-18. Drlg. sh. 5,533 ft.

Phillips Pet. Co. No. 2 Amanda, NE cor. NE SE Sec. 12-18-18. 10¾-in. csg. 2,068 ft.; drlg. sh. 4,480 ft.

Phillips Pet. Co. No. 2 Brian, C S½ NE SE Sec. 13-18-18. 10¾-in. 2,077 ft.; drlg. sh. 5,745 ft.

Phillips Pet. Co. No. 3 Brian, NW SE Sec. 13-18-18. 16-in. csg. 191 ft.; drlg. sh. 6,033 ft.

Phillips Pet. Co. No. 1 Edwards, SW NE Sec. 17-18-17. 7-in. csg. 7,704 ft.; perf. 7,628-35 ft.; would not flow and re-perf. 7,626-35 ft.; T.D. 7,740 ft.; re-perf. 7,624-35 ft.; washed and swbd.; would not flow; S.I.; W.O.; C.P. 400 lbs.; installing pneumatic pump.

Phillips Pet. Co. No. 2 El Dorado, NW cor. NW SE Sec. 12-18-18. 10¾-in. csg. 2,104 ft.; drlg. rd. sh. 5,650 ft.

Phillips Pet. Co. No. 2 Miller, C N½ Lot 4, SW Sec. 18-18-17. Drlg. rd.&gr. sh.&sd. 6,225 ft.

Phillips Pet. Co. No. 6 Sewell, NE cor. Lot 3, SW Sec. 7-18-18. 10¾-in. 2,071 ft.; drlg. sh. 5,414 ft.

Phillips Pet. Co. No. 7 Sewell, NE cor. 2,079 ft.; drlg. sh. 4,175 ft.

Lot. 4, SW Sec. 7-18-18. 10¾-in. csg.

Phillips Pet. Co. No. 8 Sewell, SE cor. Lot 4, SW Sec. 7-18-18. Drlg. sh.&sd. 5,489 ft.

Phillips Pet. Co. No. 1 J. E. Stratford, SW cor. NW NW Sec. 17-18-17. 10¾-in. in. csg. 2,073 ft.; drlg. rd. sh. 5,824 ft.

Union County—Other

E. G. Bradham No. 2 Raulston, SE Sec. 12-17-14. S.O. 3,013-25 ft.; 5½-in. csg. 3,052 ft.; W.O.C.

Fohs Oil Co. No. 1 Craig, C SE NE Sec. 5-18-14. Top Nac. 2,203 ft.; D.S.T. 2-min.; ⅝-in. cks.; rec. 40 ft. drlg. fluid; set 10¾-in. csg. 2,378 ft.; cd. top Tr. Pk. 3,068 ft.; top Crain sd. 3,158 ft.; T. Bcknr. 6,750 ft.; cd. Smackover L.; S.O. 6,849-56 ft.; D.S.T. 6,851-56 ft.; rec. 5,100 ft. fluid, over 50% S.W. and some oil 32-34 grav.; cd. 6,856-73 ft.; rec. 7 ft. 7 in. firm por. sat. oolitic L.; 3 ft. 4 in. fine silty med. por. ool. L.. no shows and 2 ft. 4 in. slightly por. oolitic L.; cg. ahead.

Goodwin & Markwick No. 1 Adams, 250 ft. SW cor. SW NW Sec. 7-17-13. 10-in. 99 ft.; drlg. sh. 2,050 ft.

Hollywood & McFarlane No. 6 Scott-Murphy, NW cor. E½ SE NW Sec. 9-16-15. Cd. T. Meakin sd. 2,336 ft., sdy. sh.; S.O. 2,362 ft.; gr. sdy. sh. 2,-362-71 ft.; 7-in. csg. 2,375 ft.; P.B. and W.O.C. 2,356 ft.

Lion Oil Ref. Co. No. 9 Hardy-Murphy, NW cor. NE NW Sec. 9-16-15. Cd. sd. S.O. 2,295-2,321 ft.; 7-in. csg. 2,344 ft.; cor. perf. 2,294-2,300 ft.; W.O.S.R. 2,-349 ft.

J. R. Lockhart No. 1-A Raulston, NE cor. SW SE Sec. 12-17-14. D.S.T. 3,-007-37 ft.; ¼-in. B. and ½-in. T cks.; W.P. 100 lbs.; 3 min.; W.P. 210 lbs.; 9 min.; rec. drlg. mud and cut oil; rng. 7-in. csg. 3,037 ft.; pkr. set on tbg.; tstg.

Mullins & Brooks et al No. 1 Nash, 500 ft. N and 338 ft. W of SE cor. NW SE Sec. 7-17-13. 10-in. csg. 148 ft.; drlg. sh. 3,040 ft.

Mullins, Brooks et al No. 2 Nash, NE cor. NE SW Sec. 7-17-13. 10-in. 148 ft.

Sam M. Richardson et al No. 1 B. Francis et al, NW cor. NW SW Sec. 7-17-13. Brkn. sd. S.O. 3,037-56 ft.; D.S.T. 3,011-56 ft. 15 min.; ⅛-in. ck. T. and ¾-in. ck. B.; B.H.P. 700 lbs.; rec. 2,900 ft. oil; drld. to 3,242 ft.; cd. 3,242-67 ft. S.W. sd., small S.O.; 7-in. csg. 3,242 ft.; T.D. 3,269 ft.; comp.; 15 B.P.H., 10% S.W.; ¼-in. ck.; T.P. 740 lbs.; C.P. 990 lbs.; est. 500,000 ft. gas; perf. 3,016-30 ft.

Sloan Wells, Tr., No. 4 G. J. Childs, 150 ft. NW cor. NE SW Sec. 8-16-16. O.W. W.O.; O.T.D. 2,656 ft.; M.I. rig to dpn.

ALABAMA

Barbour County

H. A. Stebbinger et al No. 1 Mrs. Alyce Robertson, C NE NE Sec. 19-10n-25e R.U.

NORTH MISSISSIPPI

Calhoun County

L. C. Lucas No. 1 E. C. Boland, 400 ft. E and 500 ft. S, NW cor. SW Sec. 9-22n-9e. S.D. 791 ft.

S. & O. Properties, Inc., No. 1 G. C. Cooner, SE NE Sec. 12-24n-8e. S.D. 2,300 ft.

Clarke County

Jeremiah L. Ryan et al No. 1 M. Eddins, 500 ft. SE cor. Sec. 29-2n-14e. S.D. 290 ft.

George County

Cleve Love et al No. 2 J. J. Newman Lbr. Co., C SW Sec. 9-1s-8w. S.D. 7,-038 ft., red beds.

Harrison County

Big Ridge Oil Co. No. 1 Hingin, Sec. 13-7s-10w. S.D. 2,700 ft.

Hinds County

G. Jefferys No. 1 Gaddis Farms, Inc., NW cor. SE Sec. 26-7n-4w. S.D. 3,-448 ft.

Cleve Love et al No. 1 S. F. Johnson, NE cor. Sec. 29-6n-1w. S.D. 5,218 ft., sd.; arng. D.D.

Montgomery County

Dr. T. H. Chichester No. 1 Mitchell, Sec. 36-20n-7e. Drk.

Pontotoc County

Waldrop et al No. 1 Bray, Sec. 17-11s-1e. S.D. 310 ft.

Rankin County

Urban B. Hughes, Tr., No. 1 Love Pet. Co., 330 ft. SE cor. NW NE Sec. 1-5n-1e. Set 8⅝-in. csg. 758 ft.; 5½-in. csg. 2,348 ft.; no report.

Simpson County

Cleve Love No. 1 N. E. Garner, SW cor. SW NE Sec. 1-10n-17w. S.D. 710 ft.

Goodwill O. & G. Co. No. 1 Berry, Sec. 33-2n-4e. S.D. 2,810 ft.

Yalobusha County

Chas. W. Crader et al No. 1 John Bruce Jane, 990 ft. NE cor. Sec. 24-11s-8w. Drlg. 1,297 ft.

FLORIDA

Levy County

Florida Oil Discovery No. 2 Cedar Key Co., Sec. 9-15s-13e. S.D.; W.O.; T.D. 4,092 ft.

Nassau County

St. Mary Oil Corp. No. 1 Hilliard, Sec. 19-4n-24e. Set 6⅝-in. csg. 3,935 ft.; S.D.; fsg. for bit.

Lake County

Union O. & R. Co. No. 1 Gulf Expln., sec. 17-24s-25e. S.D. 235 ft.

Suwanee County

J. W. Phillips Oil Explin. Co. No. 1 Shilkett, Sec. 14-4s-14e. Drlg. 150 ft.

LOUISIANA

N. LOUISIANA WILDCATS

Bienville Parish

Producers O. & G. Co. No. 1 Graves & Thomas, SE cor. SW SE Sec. 23-15-10. Set 13⅜-in. csg. 180 ft.; drlg. sh. & sd. 1,000 ft.

Bossier Parish

W. M. Chambers No. 1 Thomas, SE cor. Sec. 10-22-11. S.D. T.D., sh. 3,197 ft.

H. M. Harrell et al No. 1 Edwards Est. Unit, Sec. 5-17-11. T. Pettit L. 5,114 ft.; comp.; est. 60,000,000 ft. gas, open flow; 2,050 lbs. R.P.; T.D. 5,200 ft.; cmtd. 5½-in. 5,115 ft.

Premier Inv. Co. No. 1 McDade, SE SW NE Sec. 28-19-11. T.D. 2,384 ft.; acd. with 1,000 gal.; csg. seat gave away; hole full S.W.; 5½-inch csg., 2,342 ft. pmpg. est. 10 B.P.D. oil and much S.W.; rmg. and conditioning hole at 2,432 ft.

J. B. Stovall et al No. 6 Ark. Fuel fee, SE cor. NE SE Sec. 15-19-11. Drlg. sh., 370 ft.; 6-in. 365 ft.

Caddo Parish

C. L. Ablinger No. 1 Gregory, NE cor. Sec. 3-20-11. 6-in. 960 ft.; W.O.S.R. 971 ft.

C. L. Ablinger No. 2 Gregory, NW cor. NE Sec. 3-20-16. 10-in. 42 ft.; set 6-in. 962 ft.; tstd. est. 500,000 ft. gas; W.O. 966 ft.

R. E. Allison No. 3 Ellerbe, NE cor. Sec. 28-18-14. Loc.

R. E. Allison No. 4 Ellerbee, C NW NE Sec. 34-18-14. Set 9⅝-in. csg. 2,034 ft.; drlg. anhy. 4,505 ft.

R. E. Allison No. 5 Ellerbee, C NE NE Sec. 34-18-4. 9⅝-in. csg. 2,032 ft.; drlg. L.&sh. 4,237 ft.; el. 173 ft.

R. E. Allison No. 1 Jones & Mabry Unit, SE Sec. 21-18-14. 5½-in. cmtd. 5,607 ft.; W.O.C. 5,612 ft.; Schlumbg.; B. M. anhy. 4,598 ft.; B. strng. anhy. 4,696 ft.; por. L. 5,556-67 ft. and 5,570-77 ft.

Ark.-La. Gas Co. No. 1 Webb, C NW SW Sec. 4-16-13. 9⅝-in. csg. 1,236 ft.; T.D. 6,010 ft.; T. Pettit L. 5,616 ft.; D.&A.

Carney et al No. 3 Hart, SE NW Sec. 21-21-16. Drlg. sdy. sh. 1,701 ft.

W. D. Chew No. 6 Stiles, SW NE Sec. 28-21-16. Set 6-in. csg. 1,945 ft.; T.D. 1,954 ft.; tstd. S.W. 1,954 ft. and P.B. 1,944 ft.; drld. out to 1,954 ft.; tstd. S.W.; W.O. 1,954 ft.

Colonial Corp. No. 1 Thigpen-Herold, 330 ft. S and W. C Sec. 34-22-16. Cx. 4,840 ft.; P.B. and cmtd. 5½-in. 2,630 ft.; O.T.D. 4,865 ft.

Paul Cooper No. 2 Stiles, SW SE Sec. 28-21-16. Set 6-in. csg. 1,542 ft.; used 1,500 gal. acd. and tstd. dry; tstd. S.O. 1,851 ft.; drlg. to 1,977 ft.; tstd. S.W.; W.O.

R. E. Davidson No. 1 Herold et al, NW cor. SE NW Sec. 10-21-16. Will set csg.; T.D. 1,048 ft.

J. P. Driscoll et al No. 1 Woolworth, SE cor. Sec. 26-20-15. Set 16-in. csg. 208 ft.; W.O.O.

Eagle Prod. Co. No. 1 Means, SE cor. NE Sec. 9-23-15. Ran Schlmb.; arng. to set csg.; T.D. 6,004 ft.

W. C. Feazel et al No. 1 Hughes, 660 ft. SE cor. Sec. 33-18-14. 13⅜-in. 184 ft.; drlg. 1,150 ft.

Claude Ferguson No. 1 Lawhon, NW cor. Sec. 7-20-15. Cmtd. 7-in. 1,387 ft.; tstg.; T.D. 1,580 ft.

J. F. Mitchell No. 1-B Muslow, SE NE

G. W. Gibson No. 3 Muslow, NW cor. Sec. 6-20-15. Set 7-in. csg. 1,354 ft. Used 1,500 gal. acd.; pmp. 5 bbls. daily; T. D. 1,570 ft.; comp.

G. W. Gibson No. 4 Muslow, NW cor. Sec. 6-20-15. 10-in. csg. 62 ft.; 7-in. csg. 1,354 ft.; comp.; pmp. 15 B.P.D.; used 1,500 gal. acd.; T.D. 1,575 ft.

Harry Hanbury No. 1 Lowe, et al, SE cor., SW Sec. 23-18-14. Drlg. sh.&anhy. 4,-425 ft.; T. anhy. 4,072 ft.; T.M. anhy. 4,336 ft.

H. C. Prod. Co. No. 1 Kinnebrew & Ratcliff, NE cor. Sec. 5-19-16. Drlg. sh. 1,250 ft.

C. D. Loe No. 1 Meyer, SE cor. Sec. 33-18-14. Top Pettit 5,592 ft.; T.D. 5,628 ft.; perf. 5,602-25 ft. and tstd. S.W.; P.B. 5,611 ft.; 5½-in. csg. 5,627 ft.; T. D. 5,631 ft.; P.B. 5,583 ft.; drld. out to 5,610 and perf. 5,602-05 and tstd. S.W.; perf. 5,553-57 ft.; tstd. csg. and perf. 5,-592-95 ft. Set tbg. with packer 5,600 ft. tstd. S.W. and S.O. 5,592-98 ft. and re-perf. 5,589-92 ft.; set pkr. 5,587 ft. and tstd. S.W. 5,600 ft.; S.O.; S.D.; W.O.; T.D. 5,598 ft.; O.T.D. 5,631 ft.

McDonald & Campbell No. 2 Burton, NW cor. Sec. 7-20-15. Will set csg. 1,362 ft.

Manziel et al No. 3 Muslow, NW SW Sec. 6-20-15. Comp.; 40 B.P.D.; 5½-in. csg. 1,335 ft.; used 1,500 gal. acd.; T.D. 1,-575 ft.

Manziel et al No. 3 Ramsey, NE SE Sec. 32-21-15. Set 5½-in. csg. 1,348 ft.; acd. with 2,000 gal. at 1,590 ft.; W.O.S.R.

J. F. Mitchell No. 1-B Muslow, SE NE Sec. 31-21-15. Cmtd. 6⅝-in. 1,370 ft.

Oils, Inc., No. 1 Cazaux, SW cor. Sec. 10-16-13. O.W.W.O.; O.T.D. 3,500 ft.; wash to bttm., 3,500 ft.

Rodessa O. & R. Co. No. 2 Chandler, C NW SE Sec. 34-18-14. 13⅜-in. csg. 178 ft.; set 9⅝-in. 1,620 ft.; el. 240 ft.; drlg. 1,632 ft.

Harry Smith No. 1 Sproull, SE cor. Sec. 32-20-16. 5-in. csg. 1,411 ft.; tstd. S.W.

1,910 ft.; P.B. 1,650 ft. and swbg. S.W. O.T.D. 1,698 ft.; P.B. 1,650 ft.

Southern Star Pet. Corp. No. 1 Muslow, SE NW Sec. 17-20-15. Pmpd. S.W. O.T.D. 1,698 ft.; S.D. 2,150 ft.

Tri-State Prod. Corp. No. 1 Stiles, SE cor. NE Sec. 28-21-16. Set csg. 1,850 ft.; W.O.C.

Waldrip & Williams No. 1 Crystal fee, 440 ft. E, 220 ft. S, NW cor. C SE SW Sec. 24-21-16. 10-in. 98 ft.; drlg. sh. 885 ft.

R. W. Williams No. 1 Ark. Fuel. SE SE Sec. 26-21-16. 5-in. csg. 2,232 ft.; tstg.

Caldwell Parish

G. W. Ziegen et al No. 15 Cent. La. Lbr. Co., 1,650 ft. S, 330 ft. E, NW cor. Sec. 32-15-2e. 10-in. 41 ft.; W.O.C.

Catahoula Parish

Sibley Sabine Oil Co. No. 1 Peck, S½ Sec. 36-10-8e. S.D. 3,212 ft.

Claiborne Parish

E. T. Oakes et al No. 2 Kilgore, C NW SE Sec. 28-21-5. Hd. to slightly por. L. 5,294-5,303 ft.; 5½-in. csg. 5,287 ft.; used 6,000 gal. acd.; swbg. to test: tstd. S.S.O. 5,324 ft.; split csg. 2,600 ft.; cmtd. csg.; swbd. dry; set tbg. with pkr. and arng. acd. 5,324 ft.

De Soto Parish

S. S. Alexander No. 1-A Stoll, sec. 12-16. Set 7-in. csg. 2,705 ft.; acd. with 3,000 gal. and tstd. est. 2,000,000 ft. gas; 400 lbs.; gas exhausted; 1,000 ft. O.I.H., 2,761 ft.; did not pmp. at 2,-761 ft.; S.D. W.O. 2,853 ft.

Paul Miller No. 2 Jal Drlg. Co., NE Sec. 5-11-11. Set 7-in. csg. 4,038 ft.; perf. 3,901-14 ft.; C.I.; W.O. ga.; R.P. 1,400 lbs.; O.T.D. 4,205 ft.; perf. csg. 3,901-14 ft.; C.I.; W.O. ga.; R.P. 1,400 lbs.

Tippett Oil Corp. No. 1 Williams, SE cor. Sec. 31-13-11. Set 7-in. csg. 1,165 ft.; tstd. S.W. 1,410 ft. P.B. 1,335 ft. and acd. 3,000 gal.; tstd. S.W. 1,360 ft.; abd.; T.D. (P.B.) 1,360 ft.

Grant Parish

Long & Porter No. 1 Swope, SE cor. NW SE Sec. 18-9-1e. 10-in. csg. 84 ft. set 6-in. csg. 1,610 ft.; T.D. 1,625 ft.; W.O.S.R.

C. L. Thompson No. 1 McNeely Est., NE cor. Sec. 10-6-3w. D.&A. 4,518 ft.

La Salle Parish

Pet. Heat & Power Co. No. 3 Richardson, SE cor. Sec. 3-9-1e. R.U.

Trichell et al No. 1 Gallagher, NW cor Sec. 31-9-2e. D.&A. 1,751 ft.

G. C. Walsenham No. 1 Dean, NW cor. SE Sec. 23-9-1e. Drlg. 1,262 ft.

Madison Parish

Continental Oil Co. No. 2 Singer Mfg Co., C Sec. 2-15n-11e. Set 7⅝-in. csg. 522 ft.; D.&A. 4,486 ft.

Red River Parish

N. W. Hunter No. 1 LeLong, NW cor. NW SE Sec. 33-12-10. 10-in. csg. 40 ft.; D.S.T. 1,671-88 ft.; tstd. 575 ft. S. W. 9 min.; cd. S.W. sd. 2,730-40 ft.; T.D. 2,860 ft.; rng. D.S.T.

Magnolia Pet. Co. No. 59 Pugh. Sec. 12-12-11. 8¼-in. csg. 2,815 ft.; D.&A.; T. D. 6,487 ft.

J. C. Prine No. 3 Haynes, SW cor. Sec 20-13-10. 5¾-in. csg. 2,510 ft.; D.D. 2,-560 ft.; W.O.S.R.

H. B. Schumacher No. 1 Crichton, SW cor. NW Sec. 18-13-10. R.U.

Sabine Parish

Clyde Creighton No. 1 Bowman Hicks, C NE NW Sec. 3-7-12. 10-in. csg. 60 ft. S.D. 1,770 ft.

Earl F. Fox No. 1 Cook Ld. Co., SW cor. SE NW Sec. 1-9-12; O.W.W.O. O.T.D. 3,655 ft.; arng. dpn. 3,655 ft.

A. B. House No. 1 Sabine, NW NW Sec. 23-7-14. 8-in. csg. 2,134 ft.; used 7,000 gal. acd.; tstd. dry; cond. mud 3,642 ft.; arng. set 7-in. 3,500 ft.; T.D. 3,642 ft.

M. J. Kissick No. 1 J. Newton, NE cor. SE Sec. 1-7-11. 6-in. csg. 2,440 ft.; D. &A.; T.D. 2,490 ft.

LeGrande & Brown No. 1 Tatum, NE cor. NW NE Sec. 17-8-13. Tstd. dry 2,-130 ft.; tstd. S.G.; acd. with 1,000 gal.; tstd. dry 2,340 ft.; did not acd.; tstd S.W.; S.O. 2,340 ft.; 500 ft. O.I.H.; used 3,000 gal. acd.; tstd. S.O. 2,340 ft.; will set short string 4-in. csg. 2,-340 ft.

Major Oil Co. No. 1-C Bowman Hicks Lbr. Co., C SW NW Sec. 34-8-12. Drlg. chk. 2,645 ft.

Major Oil Co. No. 6 Bowman Hicks, C SW SE Sec. 11-7-13. Set 10-in. 82 ft. set 7-in. csg. 2,196 ft.; T.D. 2,504 ft.; used 2,500 gal. acd.; used 3,250 gal. acd.; tstg.

Morris Co. No. 1-A Ervine & Bishop, C NE SW Sec. 14-7-13. Set 6-in. csg. 2,-177 ft.; used 3,000 gal. acd.; tstd. S.O.; W.O. 2,573 ft.; W.O.S.R.

H. L. Nutting No. 1 Williams, SW cor Sec. 13-7-11. T.D. 3,130 ft.; used 3,000 gal. acd.; swbg. S.W. 2,860 ft.

C. R. Schuster No. 1 Mary Garcia, NE cor. NW SE Sec. 15-7-13. T.D. 2,603 ft. P.B. 2,585 ft.; tstd. dry S.D.; W.O. 2,-585 ft.

Sklar & Neighbors No. 1 Martinez, Sec 11-7-13. 6-in. csg. 2,172 ft.; used 3,000 gal. acd.; tstd. S.O. 2,312 ft.; top sd. 2,552 ft.; tstd. S.O. and S.W. 2,554 ft.; P.B. 2,210 ft. tstd. dry; W.O. 2,210 ft.

M. S. Slagle et al No. 1 Chadwick, SW cor. SE NW Sec. 32-8-10. Set 6-in. csg. 2,590 ft.; swbg. S.W.; T.D. 2,649 ft.; repr. rig; S.D.

C. H. Smith No. 1 Sabine Lbr. Co., NE cor. NW NW Sec. 9-7-13. Set 10-in csg. 66 ft.

J. L. Spier No. 2 Hale, SW cor. NW SW Sec. 1-7-13. Set 10-in. csg. 44 ft.; 6-in 2,106 ft.; tstd. S.W.; P.B. 2,560 ft. and D.&A.

Lee Whitehurst No. 2 First Natl. Bnk., C SE NW Sec. 14-7-13. 7-in. csg. 2,212 ft.; tstd. dry 2,301 ft.; used 3,000 gal acd.; tstd.; used 2,000 gal. acd. and comp.; pmpg. 40 B.P.D.; T.D. 2,605 ft.

Swolle Synd. No. 1 Mansfield Lbr. Co. Sec. 8-7-19. T.D. 4,323 ft.; 5-in. csg 3,830 ft.; drlg. plug 4,323 ft.; 2,500 gal. acd.; perf. 3,730-70 ft.; tstd. dry; W.O 3,770 ft.; O.T.D. 4,323 ft.; sqzd. off perf.; set short string 4-in. csg. 3,883 ft. and perf. 3,861-70 ft. and 3,880-83 ft.; O.T.D. 4,323 ft.; tstd. S.W.; S.O.: P.B. 3,700 ft. and perf. 2,120-40 ft. and 2,234-60 ft.; tstd. small S.G. 2,275 ft. and used 2,500 gal. acd.; tstd. dry; W. O. 2,275 ft.

Tensas Parish

H. V. Schumacher No. 4 Mound Plantation, Sec. 29-11-12e. Rmg. to bttm.; T. D. 2,450 ft.; S.D. for D.S.T. 2,450 ft.

Webster Parish

R. L. Fisher et al No. 1 S. P. D. Coyle, 660 ft. N and 1,880 ft. E of SW cor. Sec. 23-21-10. R.U.

Hunt Oil Co. No. 10 Babb, SE cor. Sec. 14-21-10. Drlg. sh.&sd. 5,910 ft.

Hunt Oil Co. No. 4 Bodcaw-Stewart, 2,-155 ft. N and 660 ft. E, SW cor. Sec. 34-21-10. Drlg. 200 ft.

Hunt Oil Co. No. 2 Davis Unit, C NW NW Sec. 24-21-10. Hollw. sd. 5,595-5,603 ft.; set 9⅝-in. csg.; did not test Hollwy. sd.; top Bodcaw sd. 8,187 ft.; T. Davis sd. 8,457 ft.; 7-in. csg. 8,707 ft.; perf. csg. 8,205-25 ft.; T.D. 8,708 ft.; comp.; 225 bbls. dist.; 24 hrs.; ¼-in. ck.; 3,084,000 ft. gas; T.P. 3,000 lbs.; C.P. 2,650 lbs.

Hunt Oil Co. No. 10 Davis, C SE SE Sec. 13-21-10. Hollwy. sd. 5,674-78 ft. and 5,719-27 ft.; 9⅝-in. csg. 5,660 ft.; tstd. small S.O. 6,038 ft.; Bod. sd. 8,-288-8,333 ft.; rng. 7-in. csg.; T.D. 8,392 ft.; prep. to test.

Hunt Oil Co. No. 23 Hone, C NW NW Sec. 13-21-10. Drlg. 4,532 ft.

Hunt Oil Co. No. 1 Sandifer, C NE NE Sec. 4-20-10. No Hollwy. sd.; top "D" sd. 8,534 ft.; S.O. 8,534-50 ft.; "D" sd. 8,537-68 ft.; Bodcaw sd. 8,628-68 ft.; set 7-in. csg. 8,715 ft.; perf. csg. 8,540-65 ft. and tstd. S.W.; will sqz. and retest; T.D. 8,600 ft.; O.T.D. 8,720 ft.; P. B. 8,558 ft. and cmt.; did not hold; perf. 8,533-38 ft. and tstd. S.W.: S.O.: T.D. 8,558 ft.; drlg. out cmt. to 8,538 ft.; perf. 8,529-31 ft.; swb. fluid down 2,000 ft.; perf. 8,531-36 ft.; swb. fluid down 7,000 ft.; perf. 8,536-38 ft.; tstg.

Hunt Oil Co. and Stanolind O. & G. Co. No. 1 Coffee-Webster Inv. Co. Unit, C NE NW Sec. 36-31-10. 13⅜-in. csg. 677 ft.; W.O.C. 700 ft.

Magnolia Pet. Co. No. 4 Branton, NE cor. Sec. 6-22-9. 9⅝-in. csg. 5,933 ft.; drlg. rd. bds. 6,968 ft.

Magnolia Pet. Co. No. 1-C Pardee, C NW NE Sec. 17-23-11. Rmd. and set 9⅝ in. csg. 5,920 ft.; top lower Marine 7,998 ft.; 8,505-10 ft. strks. hd. sd., O. &G. odor; cd. 8,537-39 ft.; 2-ft. sd. gas odor; drlg. to 10,070 ft.; ran elec. form. tester; D.&A.; T.D. 10,070 ft.

Magnolia Pet. Co. No. 1 Roseberry Unit, 20 ft. N and W. C SE Sec. 29-23-9. Set 13⅜-in. csg. 887 ft.; drlg. 3,454 ft.

North American Oil Consol. Co. No. 4 Stewart-Coyle, C NW SE Sec. 29-21-10. Drlg. sh.&L. 7,118 ft.

Ohio Oil Co. No. 5 Bodcaw, Acct. 5. Sec. 13-21-10. No Holloway sd.: 9⅝-in. csg. 5,640 ft.; drlg. L.&sh. 7,048 ft.

Ohio Oil Co. No. 51 Bodcaw Acct. 2, NE cor. Sec. 15-21-10. 7-in. csg. 8,583 ft.; T.D. 8,618 ft.; tstg.

Ohio Oil Co. No. 8 B. Sydney Hrs., SW cor. Sec. 16-20-10. No Hollwy. sd.: 9⅝-in. csg. 5,670 ft.; drlg. sdy. sh. 7,855 ft.

Oliphant Oil Corp. No. 1 Gray & Stephens, C SE SW Sec. 35-21-10. Top Tr. Pk. 5,882 ft.; Hollwy. sd. 5,975-88 ft.; 9⅝-in. csg. 5,595 ft.; drlg. sdy. sh. 7,450 ft.

Oliphant Oil Corp. No. 1-A Hodges, C NW NE Sec. 3-20-10. Drlg. 4,455 ft.

Oliphant Oil Corp. No. 2-B Stewart, C NW NW Sec. 4-20-10. No Hollwy. sd.: 9⅝-in. csg. 5,615 ft.; top "D" sd. 8,594 ft., S.W.: T. Bodcaw 8,684 ft.; 7-in. csg. 8,672 ft.; tstd. S.O.&G. and S.W. 8,692 ft.; arng. to core 8,697 ft.

Stanolind O. & G. Co. and W. Delaney No. 1 Pardee-Coffee Unit, C NE Sec. 36-21-10. T. Tr. Pk. 5,932 ft.; no Holloway sd.; set 9⅝-in. csg. 5,955 ft.; drlg. 6,532 ft.

Stanolind O. & G. Co. and Hunt Oil Co. No. 1 Pardee-Coffee Unit, C NE NE Sec. 36-21-10. Top Tr. Pk. 5,897 ft.; no Hollwy.; 9⅝-in. csg. 5,944 ft.; T. Bodcaw sd. 8,586 ft.; T.D. 8,631 ft. in Bodcaw sd.; tstg. with elec. form. tstr.

Stanolind O. & G. Co. No. 1 Webster Inv. Co., C NE NE Sec. 35-21-10. 13⅜-in. csg. 737 ft.; no Hollwy. sd.; top Tr. Pk. 5,680 ft.; 9⅝-in. csg. 5,997 ft.; T. "D" sd. 8,172 ft.; T. Rodaw. sd. 8,-263 ft.; 7-in. csg.; T.D. 8,316 ft.; tstg.

Union Prod. Co. No. 1 Walker Unit, 50 ft. S. C SE Sec. 30-18-8. 13⅜-in. csg. 1,413 ft.; drlg. sh.&anhy. 5,360 ft.

Woodley Pet. Co. No. 1 J. O. Couch, C NW SW Sec. 36-21-10. Drlg. r.b. 7,-256 ft.

SOUTH LOUISIANA FIELDS

Abbeville—Vermilion Parish

Continental Oil Co. No. 1 Franciol. Sec. 67-12s-3e. Drlg.

Bancroft—Beauregard Parish

Geo. E. Lilly et al No. 1 W. K. Rice, Sec. 15-6s-13w. T. gas sd. 7,185 ft.; T. oil sd. 7,326 ft.; T.D. 7,338 ft.; 7-in. csg. 7,326 ft.; tstg.; flwg. oil and wash wtr.

Republic Prod. Co. No. 2 Columbia Ld. & Tmbr. Co., Sec. 16-6s-13w. T.D. 3,-400 ft.; P.B.: sdtrkd.: T.D. 7,360 ft.: 7-in. csg. 7,352 ft. (cor.); sdtrkd.: T.D. 7,343 ft.; oil sd., top sd. 7,283 ft.

Republic Prod. Co. No. 3 Lutcher Moore Lbr. Co., Sec. 16-6s-13w. Drlg. sd. 3,-611 ft.

Bateman Lake—St. Mary Parish

Texas Co. No. 2 State-Bateman Lake, Sec. 21-16s-12e. Driving piling.

Texas Co. No. 1 Wax Bayou, Sec. 21-16s-12e. T.D. 11,185 ft.; 7⅝-in. csg. 11,126 ft.; P.B. 10,925 ft.; perf. csg. 10,907-20 ft.; tstd. oil and S.W.; set retainer at 10,895 ft.; perf. csg. 10,907-12 ft.; rec. 6,615 ft. of oil and S.W.; P.B. 10,810 ft.: perf. csg. 10,115-35 ft.; tstd. gas on D.S.T.

Baton Rouge—East Baton Rouge Parish

Wm. Helis et al No. 4 Duplantier, Sec. 65-7s-1w. Drlg. sh. 2,060 ft.

Wm. Helis No. 2 Harry Nolson, Sec. 36-7s-1w. Drlg. sh. 6,250 ft.

Bayou Blue—Iberville Parish

Humble O. & R. Co. No. 3 Schwing Lbr. Co., Sec. 66-9s-11e. Drlg. sh. 2,539 ft.

Bayou Bouillon—St. Mary Parish

Transcontinental Oil Co. No. 5 State, Sec. 13-9s-9e. T.D. 1,275 ft.; 10¾-in. csg. 1,170 ft.

Bayou Choctaw—West Baton Rouge

La. Crusader No. 4 Schwing, Sec. 29-8s-11e. Drlg. sh.&L. 8,291 ft.

La. Crusader No. 5 Schwing, Sec. 29-8s-11e. 9⅝-in. csg. 2,250 ft.; T.D. 4,755 ft.; P.B. 4,200 ft.; sdtrkd. 4,214 ft.; drlg. sd.&sh. 6,365 ft.

Bayou Des Allemands—St. Charles Parish

Amerada Pet. Corp. No. 3 St. Charles Ld. Co., Sec. 13-15s-20e. Dredge canal.

Amerada Pet. Corp. No. 4 St. Charles Ld. Co., Sec. 13-15s-2e. Loc.

Caillou Island—Terrebonne Parish

Texas Co. No. 4 State-Terrebonne Bay, Sec. 19-23s-20e. Drlg. sh. 4,286 ft.

Texas Co. No. 29 State, Sec. 17-23s-20e. Rig.

Cameron Meadows—Cameron

Burton-Sutton Oil Co. No. 26 Sch. Ld., Sec. 16-14s-13w. T.D. 2,465 ft.; 13⅜ in. csg. 2,465 ft.; drlg. sh.&L. 5,770 ft.

Chacahoula—La Fourche Parish

Sun Oil Co. No. 3 Dibert, Stark & Brown Cypress Co., Sec. 70-15s-15e. T.D. 7,275 ft.; 7-in. csg. 7,275 ft.; I.P. 330 B.P. D.; ¼-in. ck.; T.P. 300 lbs.; C.P. 600 lbs.

Sun Oil Co. No. 4 Dibert Stark and Brown Cypress Co., Sec. 70-15s-15e. R.U.

Charenton—St. Mary Parish

Edwards & Aber No. 2 Blanchard, Sec. 21-13s-9e. T.D. 1,148 ft.; 5½-in. csg. 1,141 ft.; tstd. S.W.; P.B. 1,132 ft.; perf. csg. 1,125-32 ft.; W.O.S.R.

Edwards & Aber No. 1 Lebland, Sec. 21-13s-9e. Top sd. 1,119 ft.; T.D. 1,123 ft.; W.O.S.R.

Kinsley Oil, Inc., No. 1-B Hertel, Sec. 30-13s-9e. Loc.

Pan American Prod. Co. No. 3-B H. E. Cuer, Sec. 25-13s-9e. T.D. 2,446 ft.; 7-in. csg. 2,437 ft.

Pan American Prod. Co. No. 1 Law Realty, Sec. 31-13s-10e. Drk.

Peterson Pet. Corp. No. 1 Green Est., Sec. 27-13s-9e. T.D. 3,058 ft.; abd.

J. P. Scranton et al No. 1 State, Twp. 13s-9e. T.D. 3,004 ft.; abd.

St. Mary Oil Co. No. 1 Robichaux, Sec. 21-13s-9e. T.D. 1,830 ft.; 7-in. csg. 1,-830 ft.; perf. csg. 1,800-05 ft. and 1,-795-1,800 ft.; tstd. S.W.; sqzd. off perf. perf. csg. 1,797-1,802 ft.; made sqz. job.

Convent—St. James Parish

Continental Oil Co. No. 2 Realty Operators, Inc., Sec. 16. 13⅜-in. csg. 1,-492 ft.; cg. L. 5,345 ft.

Darrow—Ascension Parish

Humble O. & R. Co. No. 19 Community, Sec. 31-10s-2e. T.D. 7,280 ft., salt; P.B. 4,596 ft.; 7-in. csg. 7,716 ft.; T.D. 7,-832 ft.; perf. csg. 6,700-05 ft.; made sqz. job; perf. csg. 6,730-39 ft.; tstd. S.W.; abd.

Humble O. & R. Co. No. 4 Landry, Sec. 34-10s-2e. Drlg. sh. 240 ft.

Kiva Oil Co. No. 1 Dupiessis, sec. 69-10s-2w. S.D. 2,523 ft.

Dog Lake—Terrebonne Parish

Texas Co. No. 22 State, Sec. 5-22s-16e. 13⅜-in. csg. 2,030 ft.; T.D. 6,027 ft.; P.B.; sdtrkd.; T.D. 6,385 ft.; fsg.

Edgerly Field—Calcasieu Parish

R. H. Kean et al No. 1 M. J. Muller et al, Sec. 29-9s-11w. T.D. 2,862 ft.; 7-in. csg. 2,804 ft.

Union Sulphur Co. No. 1 Ld. Sulphur Mining Co., Sec. 33-9s-11w. T.D. 6,981 ft.; abd.

Fausse Point—Iberia Parish

Texas Co. No. 5 State Lake-Fausse Point, Sec. 35-11s-8e. Drlg. sh. 9,086 ft.

Gibson—Terrebonne Parish

Shell Pet. Corp. No. 6-B Realty Operators, Sec. 17-17s-15e. T.D. 9,501 ft.; 7-in. csg. 9,487 ft.; I.P. 489 bbls. in 21 hrs.; 11/64-in. ck.

Garden Island—Plaquemines Parish

Texas Co. No. 30 State, Sec. 38-23s-33e. T.D. 6,943 ft.; sdtrkd.; T.D. 6,885 ft.; 7-in. csg. 6,885 ft.

Gillis—Calcasieu Parish

Fohs Oil Co. No. 1 Erwin, Sec. 14-9s-8w. T.D. 7,053 ft.; 7-in. csg. 7,051 ft.; perf. csg. 7,026-32 ft.; tstd. gas-cut mud; perf. csg. 6,942-52 ft.; I.P. 45 B.O.P. D.; 18/64-in. ck.

Union Sulphur Co. No. 12 State, Sec. 12-9s-8w. Cg. sdy. sh. 8,356 ft.

Grand Bay—Plaquemines Parish

Gulf Ref. Co. No. 1 State-QQ, Sec. 6-20s-19e. 13⅜-in. csg. 1,498 ft.; shaly sd. S.O. 6,083-86 ft.; rec. 1,830 ft. mud &S.W.; D.S.T. 6,582-6,612 ft.; drlg. sh. 7,112 ft.; D.S.T. 6,662-77 ft.; rec. 270 ft. oil; cd. oil sd. 7,145-46 ft.; T.D. 7,-147 ft.; top sd. 7,137 ft.; 9⅝-in. csg. 7,135 ft.

Hackberry—Cameron Parish

L. W. Capps et al No. 1 Duhon, Sec. 27-12s-10w. T.D. 3,487 ft.; 7-in. csg. 3,-271 ft.; W.O.S.R.

Stanolind O. & G. Co. No. 56 State, Kelso Bayou, Sec. 22-12s-10w. Drk.

Superior Oil Co. No. 5 Benson Vincent, Sec. 30-12s-10w. Drlg. sd.&sh. 3,137 ft.

Texas Co. No. 16-B State-Hackberry, Twp. 12s-9w. Drlg. L, rk. 6,447 ft.

Texas Co. No. 24-B State, Sec. 12s-9w. T.D. 8,052 ft.; sdtrkd.; T.D. 8,163 ft.; 7-in. csg. 8,050 ft.; perf. csg. 7,903-16 ft.; tstd. S.W.; P.B. 7,780 ft.; perf. csg. 7,763-74 ft.; W.O.S.R.

Union Sulphur Co. No. 7 Caldwell et al, Sec. 37-12s-10w. Drlg. sh. 6,550 ft.

Union Sulphur Co. No. 11 Doiron, Sec. 37-12s-10w. Drlg. sh. 5,158 ft.

Horseshoe Bayou—St. Mary Parish

Texas Co. No. 2 State, Sec. 37-17s-9e. T.D. 11,644 ft.; 9⅝-in. csg. 11,631 ft.; cg. sh.&L. 12,512 ft.

Jeanerette—St. Mary Parish

Herton Oil Co. No. 1 Adeline Sugar Co., Sec. 39-13s-9e. Drlg. sh. 4,310 ft.

Herton Oil Co. No. 9 Carter, Sec. 38-13s-9e. Drlg. brkn. sd. 9,325 ft.

Jefferson Island—Iberia Parish

Texas Co. No. 2 Jefferson Island, Sec. 58-12-5e. 18⅝-in. csg. 40 ft.; drlg. sdy. sh. 2,937 ft.

Jennings—Acadia Parish

W. T. Burton No. 6 Roboria, sec. 41-9s-2w. 7-in. csg. 6,721 ft.; fsg. tbg.; T.D. 6,997 ft.; sdtrkd. at 6,118 ft.; drld. to 6,178 ft.; sdtrkd. at 6,023 ft.; T.D. 6,-732 ft.; trying to drill by fish; P.B. 6,104 ft.; W.O.C.; sdtrkd. 6,020 ft.; drlg. sh. 6,056 ft.

A. W. Forrester No. 1 Jules Clement, Sec. 46-9s-2w. T.D. 3,060 ft.; fsg.

Glassell & Glassell No. 4 McFarlain, Sec. 41-9s-2w. Drlg. sh. 6,220 ft.

Glassell & Glassell No. 7 Trushel, Sec. 42-9s-2w. Drlg. shly. sd. 5,919 ft.

Guaranty Oil Co. No. 2 Houssere-Latrielle, Sec. 47-9s-2w. T.D. 1,840 ft.; W. O.S.R.

Gulf Ref. Co. No. 1 Lamb, Sec. 45-9s-2w. T.D. 5,898 ft.; rmg.

Jolly Pet. Co. No. 2 Crusel, Sec. 41-9s-2w. 16-in. 84 ft.; drlg. sdy. L. 5,478 ft.

Jolly Pet. Co. No. 3 McFarlain, Sec. 41-9s-2w. Drlg. sdy. sh. 5,220 ft.

L. & L. Oil Co. No. 4 Houssiere Latreille, Sec. 47-9s-2w. T.D. 1,825 ft.; 7-in. csg. 1,817 ft.; T.D. 1,881 ft.; pmpd. dry; S.D.

Ladak Oil Co. No. 8 Jenning Clement, Sec. 46-9s-2w. T.D. 1,735 ft.; 6-in. csg. 1,705 ft.; tstd. S.W.; pull screen; dpnd. to 1,764 ft.; swbd. dry.

O'Mera et al No. 2 McFarlain, Sec. 41-9s-2w. T.D. 1,625 ft.; 10¾-in. csg. 1,-628 ft.; drlg. sh.&shli. 6,850 ft.

Port City Oil Co. No. 23 Jennings Haywood, Sec. 41-9s-2w. R.U.

Shell Pet. Corp. No. 5 Community, Sec. 40-9s-2w. Cg. sdy. sh. 7,562 ft.

Stanolind O. & G. Co. No. 113 Crowley & Mineral Co., Sec. 48-9s-2w. T.D. 6,-503 ft. 8⅝-in. csg. 1,556 ft.

Superior Oil Co. No. 9 Jennings-Haywood. Sec. 41-9s-2w. T.D. 6,633 ft.; 7-in. csg. 6,413 ft.; perf. lnr. 7,276-7,354 ft.; I.P. 575 B.P.D.; 14/64-in. ck.

Superior Oil Co. No. 15 Leckelt, Sec 42-9s-2w. T.D. 8,744 ft.; 5½-in. liner 8,739 ft.; perf. csg. 7,050-80 ft.; I.P. 388 B.P.D.; 12/64-in. ck.

Superior Oil Co. No. 16 Wm. Leckelt, Sec. 42-9s-2w. R.U.

Three Sands Oil Co. No. 2 Clement, Sec 46-9s-2w. 6-in. csg. 1,700 ft.; S.D. 2,600 ft.

Lafitte—Jefferson Parish

Texas Co. No. 4 Madison Realty Co., 17s-24e. Drlg. sdy. sh. 9,551 ft.

Texas Co. No. 1 Sch. Bd., Sec. 16-17s-24e. 13⅜-in. csg. 2,030 ft.; drlg. sh.& L. 10,311 ft.

Lake Hermitage—Plaquemines Parish

Gulf Oil Corp.-Humble O. & R. Co. No. 9 La Fourche Basin, Sec. 2-18s-25e. Driving piling.

Lake Pelto—Terrebonne Parish

Texas Co. No. 22 State, Sec. 8-23s-18e T.D. 6,027 ft.; sdtrkd.; drlg. sdy. sh. 5,968 ft.

Leesville—La Fourche Parish

Texas Co. No. 7 Leeville, sec. 27-21s-22e. T.D. 8,667 ft.; D.S. stk.; sdtrkd.: T.D. 8,436 ft.; sdtrkd.; T.D. 8,685 ft.; stk. 9⅝-in. csg. at 8,577 ft.; sdtrkd. 8,440 ft.; drlg. sh. 8,735 ft.

Lirette—Terrebonne Parish

Humble O. & R. Co. No. 1 Laterre, Inc., Sec. 31-19s-19e. 13⅜-in. csg. 3,174 ft.; cg. sd. 9,420 ft.

Lake Long—La Fourche Parish

Fohs Oil Co. No. 7 State-Lake Long Twp. 17s-19e. T.D. 295 ft.; 18⅝-in. csg. 295 ft.; drlg. sh. 3,415 ft.

New Iberia—Iberia Parish

H. Fotiades No. 7 Gulf Ld., Sec. 25-12s-7e. Drk.

Wm. Helis No. 5 Schwing, Sec. 56-12s-7e. T.D. 4,954 ft.; P.B. 4,188 ft.; W.O.C.

Texas Co. No. 2 Bryant, Sec. 25-12s-7e. R.U.

Texas Co. No. 1 Gonsoulin, Sec. 13-12s-7e. T. salt 9,200 ft.; T.D. 9,210 ft.; P. B. 1,219 ft.

Texas Co. No. 1 Renaudet et al, Sec. 71-12s-7e. Drlg. sh. 2,141 ft.

North Crowley—Acadia Parish

Humble O. & R. Co. No. 5 Federal Ld. Bnk., Sec. 33-8s-1e. T. sd. 7,179 ft.; T. D. 7,198 ft.; I.P. 454 B.P.D.; ⅞-in. ck.

Humble O. & R. Co. No. 5 H. T. Habetz, Sec. 45-8s-1e. R.U.

North Tepetate—Acadia Parish

Atlantic Ref. Co. No. 2 Klumpp, Sec. 12-7s-2w. Cd. gas sd. 7,943-63 ft.; T.D. 8,655 ft.; 7-in. csg. 8,654 ft.; P.B. 8,511 ft.; perf. csg. 8,478-8,504 ft.; flwg. gas and dist.

Port Barre—St. Landry Parish

Pan American Prod. Co. No. 1 Rene Nesal. Drk.

Y. D. Spill No. 1 Gaudet, sec. 4-6s-5e. S.D. 4,700 ft.

Potash—Plaquemines Parish

Humble O. & R. Co. No. 37 Orleans Lv Bd., Sec. 23-18s-15e. T.D. 3,138 ft.; rng. 13⅜-in. csg. 3,061 ft.; drlg. sh. 5,585 ft.

Western Gulf Prod. Co. No. 1 Pascale Sec. 6-18s-27e. Loc.

Western Gulf Prod. Co. No. 1-A Treadway, Sec. 6-18s-27e. Loc.; (cor.).

Quarantine Bay—Plaquemines Parish

Gulf Oil Corp. No. 2-A Orleans Levee Bd., Sec. 7-19s-17e. Loc.

Gulf Ref. Co. No. 5 State, Sec. 17-19s-17e. Loc.

Gulf Ref. Co. No. 6 State, Sec. 17-19s-17e T.D. 5,900 ft.; 9⅝-in. csg. 5,880 ft.; drlg. sh. 7,863 ft.

Gulf Oil Ref. Co. No. 7 State, Sec. 18-19s-17e. Drlg. sd. 5,479 ft.

Raceland—La Fourche Parish

Amerada Pet. Corp. No. 1 Godchaux Sugars, Inc., Sec. 34-15s-19e. 18⅝-in. csg. 262 ft.; T.D. 11,312 ft.; 7-in. csg. 11,312 ft.; T.A.

Sorrento—Ascension Parish

Sorrento Pet. Corp. No. 2 White, Sec. 22-10s-4e. 10¾-in. csg. 1,940 ft.; drlg. sh. 6,937 ft.

South Roanoke—Jeff Davis Parish

Union Sulphur Co. No. 2 T. R. S. Farms Sec. 23-10s-4w. T.D. 10,954 ft.; (cor.). sdtrk. 9,075 ft.; drilled to 9,266 ft.; stuck DeS.; P.B. 8,860 ft.; sdtrkd.; drlg. sd. 10,045 ft.

Gueydan—Acadia Parish

A. M. Barbe No. 1 G. L. Humble, Sec. 27-11s-1w. Cg. sh.&sd. 4,488 ft.

Burton-Sutton Oil Co. No. 1 Valerean-Simon, Sec. 37-11s-1w. Drlg. sh. 8,-210 ft.

Starks—Calcasieu Parish

J. R. Turnbull et al No. 5 Industrial Lbr Co., Sec. 30-9s-12w. Top salt 2,053 ft.; S.D., T.D. 2,058 ft.; abd.

Sweet Lake—Cameron Parish

Pure Oil Co. No. 1 Stanolind O. & G. Co. fee lse., Sec. 12-13s-8w. Drk.

Timbalier Bay—La Fourche Parish

Gulf Oil Corp. No. 3 State (O.W.D.D.), Sec. 36-23s-21e. O.T.D. 8,728 ft.; P.B.; sdtrkd.; drlg. sh. 6,787 ft.

Gulf Oil Corp. No. 4 state, sec. 36-23-21e. T.D. 7,373 ft.; T.D. sdtrkd. hole 6,231 ft.; fsg.; P.B. and sdtrkd. 3,501 ft.; T.D. 6,545 ft.; drld. by jnk. to 6,668 ft.; P.B.; 7-in. csg. 6,651 ft.; top salt 7,224 ft.; T.D. 7,268 ft., salt; P.B. 5,400 ft.; perf. csg. 5,330-40 ft.; tstd. 3,504 lbs. press.; reset screen; would not flow; reset screen; bailed dry; P.B. 5,345 ft.; perf. csg. 5,330-40 ft.; swbd. dry; S.D.

Valentine—La Fourche Parish

Wm. Helis et al No. 4 Valentine Sugars Inc., Sec. 2-17s-20e. T.D. 7,567 ft.; P.B. 6,765 ft.; drld. out to 6,790 ft.; tstd. oil and S.W. 6,726-95 ft.; P.B. 4,750 ft. sdtrkd. 4,550 ft.; drlg. sd. 5,945 ft.

Pan American Prod. Co. No. 2-A Community, Sec. 58-17s-20e. Drlg. sh. 9,-385 ft.

Pan American Prod. Co. No. 2 Robichaux, Sec. 4-17s-20e. Drlg. sh. 4,975 ft.

John Vacerro et al No. 1 Acosta Hrs., Sec. 9-17s-20e. Spd.

Venice—Plaquemines Parish

Tide Water Asso. Oil Co. No. 9 Manhattan Land & Fruit Co., Sec. 26-21s-30e. T.D. 3,669 ft.; 10¾-in. csg. 2,457 ft.; broke lower 2 jts.; prep. to sdtrk.

Villa Platte—Evangeline Parish

Continental Oil Co. No. 1 Phillip Fontenot, Sec. 44-3s-2e. T.D. 9,092 ft.; I.P. 474 B.P.D.; ⅞-in. ck.

Continental Oil Co. No. 2 Ludeau-Haas Sec. 44-3s-2e. T.D. 9,046 ft.; top sd. 9,-013 ft.; I.P. 409 B.P.D.; ⅞-in. ck.

Continental Oil Co. No. 3 Piere McDaniel, Sec. 44-3s-2e. R.U.R.

Continental Oil Co. No. 2 Martha Haas. Sec. 44-3s-2e. Drlg. sh. 4,679 ft.

Continental Oil Co. No. 2 N. H. Hirsch, Sec. 44-3s-2e. Drlg. sh. 6,948 ft.

Continental Oil Co. No. 2 Petre, Sec. 44-3s-2e. R.U.

Texas Co. No. 2 fee, Sec. 27-3s-2e. Drlg. sh. 4,275 ft.

Vinton—Calcasieu Parish

J. M. Donald et al No. 1 Gordon, Benchenstein-Flynn, Sec. 34-10s-12w. T.D. 1,000 ft.; W.O.C.

West Gueydan—Vermilion Parish

Magnolia Pet. Co. No. 1 Adam Comier, Sec. 5-12s-2w. Drlg. L.&sh. 3,908 ft.

West Lake Verret—St. Martin Parish

Shell Pet. Corp. No. 2 Jeanerette, Sec. 14-14s-12e. Dredge canal.

Woodlawn—Jeff Davis Parish

Union Sulphur Co. No. 1 Racca, Sec. 12-9s-6w. T.D. 8,911 ft. (cor.).; P.B. 8,-908 ft.; tstg.

Union Sulphur Co. No. 1 A. H. Thomas. Sec. 12-9s-6w. Drlg. sh.&L. 6,508 ft.

S. LOUISIANA WILDCATS

Acadia Parish

Tennark, Inc., No. 1 C. J. Freeland, Sec. 64-7s-2e. R.U.R.

Tri Parish Drillers, Inc., No. 1 Paul Stag, Sec. 4-7s-1w. Drk.

Assumption Parish

Humble O. & R. Co. No. 1 Milliken & Farewell Co., Inc., Sec. 79-14s-14e. 13⅜-in. csg. 2,978 ft.; drlg. sh. 5,-007 ft.

Avoyelles Parish

Sid Richardson No. 1 Haas Inv. Co., Sec. 7-28s-3e. Drlg. sh. 6,050 ft.

Calcasieu Parish

Humble O. & R. Co. No. 1 Desire-Miller. Sec. 32-11s-6w. T.D. 8,684 ft.; abd.

Humble O. & R. Co. No. 1 S. A. Knapp, Sec. 20-10s-8w. Drlg. sh. 2,950 ft.

David B. MacDaniel No. 2 Sch. Ld., Sec 16-9s-7w. 15½-in. csg. 46 ft.; 10¾-in csg. 1,299 ft.; drlg. sh. 4,650 ft.

Cameron Parish

Federal Royalty Co. No. 2 State-Calcasieu Lake, Twp. 13s-9w. Drlg. sh. 214 ft.

Superior Oil Co. No. 1 John Pradia, Sec. 4-15s-8w (core test). R.U.

Iberville Parish

California Co. No. 1 Schwing Lbr. Co., Sec. 96-10s-10e. Canal completed.

Humble O. & R. Co. No. 1-B A. Wilberts Sons Lbr. Co., Sec. 78-8s-8e. Dredge canal.

Shell Pet. Corp. No. 1 Natalbany Lbr. Co., Sec. 18-9s-2e. Bldg. road.

La Fourche Parish

Texas Co. No. 1 L.L.&E. Golden Meadows, Sec. 77-19s-21e. Drlg. sdy. sh. 2,-441 ft.

Texas Co. No. 1 La Terre, Sec. 1-20s-21e. T.D. 8,898 ft.; 9⅝-in. csg. 8,898 ft.; T.D. 11,135 ft.; 2,500 ft. 6⅝-in. csg 11,135 ft.; perf. csg. 9,975-10,005 ft. tstd. 21 stnds. dist.; P.B. 8,600 ft.; drlg. out cmt. to 9,316 ft.; perf. csg. 9,265-90 ft.; tstd. S.W.; made sqz. job; reperf. csg. 9,230-57 ft.; make D.S.T.; perf csg. 8,850-70 ft.; rec. 71 stands of S.W. and 3 stands of mud and oil; sqzd. perf.; W.O.C.; perf. csg. 8,500-20 ft.; I.P. 828 bbls. 37.4-grav. oil per day; ¼-in. ck.; started showing S.W.; killed; will test 8,495-8,510 ft.

Texas Co. No. 1 State-Catfish Lake, Sec 77-19s-21e. 18⅝-in. csg. 90 ft.; drlg. L. 7,245 ft.

Orleans Parish

W. T. Burton No. 2-B Faubourg de Montluzin, Sec. 1-10s-13e. T.D. 9,410 ft.; cmtd. leak in surf. csg.; drlg. plug.

W. T. Burton No. 1 L.&N.R.R., Sec. 18-11s-15e. Dredge canal.

W. T. Burton No. 2 L.&N.R.R., Sec. 1-12s-14e. Dredge canal.

W. T. Burton No. 1-B R. E. E. de Montluzin, Sec. 1-10s-13e. Drk.

W. T. Burton No. 1 State-Lake Pontchartrain Twp. 10s-13e. T.D. 8,367 ft.; P.B. 7,775 ft.; sdtrkd. at 7,959 ft.; T. D. 8,165 ft.; 9⅝-in. csg. 8,165 ft.; T.D. 8,241 ft.; tstd. S.W.; D.S.T. 8,135-8,-241 ft.; drlg. sd. 10,098 ft.

Plaquemines Parish

Texas Co. No. 1 L.L.&E. Bastian Bay Sec. 43-20s-28e. Drlg. sdy. sh. 1,699 ft.

St. Bernard Parish

Gulf Ref. Co. No. 4 State-R.R (Lake Borgne), Twp. 12s-15e. T.D. 8,180 ft.; run csg.; no shows.

Wm. Helis et al No. 1 Mereaux Munez Sec. 34-12s-12e. Drlg. sd.&sh. 5,404 ft.

Vendome Pet. Corp. No. 1 Kenilworth Plantation, Sec. 59-13s-14e. T.D. 1,982 ft.; W.O.C.

St. Charles Parish

Texas Co. No. 1 L.L.&E. Paradis, Sec. 39-14s-20e. Drlg. sdy. sh. 3,450 ft.

St. James Parish

Shell Pet. Corp. No. 1 Shexnayder, Sec 38-12s-15e. Drlg. sh.&L. 6,963 ft.

St. Martin Parish

Texas Co. No. 6 State Lake Mongoulois, Sec. 10-10s-9e. T.D. 9,858 ft.; 7⅝-in. csg. 9,839 ft.; top salt 10,388 ft.; T.D. 10,403 ft.; P.B. 9,725 ft.; W.O.C.

Texas Co. No. 11 St. Martin Ld. Co., Sec. 21-8s-7e. Top salt 8,904 ft.; T.D. 9,404 ft.; 7-in. csg. 8,912 ft.; P.B. 7,-175 ft.; drld. out to bttm.; P.B. 8,080 ft.; perf. csg. 8,060-70 ft.; tstd. mud, gas and S.W.; sqzd. off perf.; perf. csg. 8,060-65 ft.; tested 38 stands oil and gas showing fresh wtr.; set screen and lnr.; washed well; no flow; R.U. to pmp.

St. Mary Parish

St. Mary Oil Co. No. 2 L. Herbert, Sec. 31-13s-9e. T.D. 6,952 ft.; stk. D.S.: P. B. 6,764 ft.; sdtrkd.; drlg. sh. 2,650 ft.

St. Tammany Parish

A. P. Portas No. 1 W. C. Forbes, sec. 33-7s-15e. Drk.

Terrebonne Parish

Texas Co. No. 1 Continental Ld. & Fur Co., Sec. 29-18s-14e. 18⅝-in. csg. 101 ft.; T.D. 10,039 ft.; P.B. 9,852 ft.; sdtrk. 9,984 ft.; T.D. 10,075 ft.; 9⅝-in. csg. 10,061 ft.; drlg. sh.&L. 11,333 ft.

Texas Co. No. 2 State-Coon Point, Twp 23s-14e. 13⅜-in. csg. 1,900 ft.; T.D. 2,-851 ft.; S.D. for repairs.

TEXAS

Week Ending December 17

GULF COAST FIELDS

Hastings Field—Brazoria County

Humble O. & R. Co. No. 1 H. Beers, Perry & Austin Sur. Drlg. sh. 1,510 ft.

Stanolind O. & G. Co. No. 2-C Cecil Brown, W. H. Snyder Sur. Drk.

Stanolind O. & G. Co. No. 9 Surface, A. C.H.&B. Sur. T.D. 5,272 ft.; P.B. 2,575 ft.; sdtrkd.; drlg. sh. 5,136 ft.

Old Ocean—Brazoria County

Commerce Oil Co. No. 1 S. M. Patterson, Polly & Chance Sur. 9⅝-in. csg. 7,000 ft.; drlg. sh. 8,430 ft.

Harrison & Abercrombie No. 3 Armstrong Plantation, Polley & Chance Sur. S.D. 8,878 ft.

Harris & Abercrombie No. 4 Armstrong, Polly & Chance Sur. Cg. 10,006 ft.

Harrison & Abercrombie No. 3 Chenault, C. Breen Sur. Drlg. sh. 6,026 ft.

Harrison & Abercrombie No. 1 Lola Buck, Polley & Chance Sur. Drk.

Harrison & Abercrombie No. 1 R. D. McDonald, C. Breen Sur. T.D. 10,243 ft.; tstg.

Sun Oil Co. No. 1 Campbell, Chas. Breen Sur. Drlg. sd.&sh. 8,920 ft.

West Columbia—Brazoria County

Mike Hogg No. 5 fee, M. Varner Sur. Drlg. sh. 5,510 ft.

Texas Co. No. 89 Hogg, G. Tenille Sur. Drlg. sd. 2,683 ft.

Texas Co. No. 10 Phillips, G. Tennille Sur. Drlg. sh.&L. 5,326 ft.

Cedar Point—Chambers County

Standard Oil Co. of Texas et al No. 4-118 State. Drlg. sh. 4,950 ft.

Seabreeze—Chambers County

Sun Oil Co. No. 5 Acom. H.T.&B. Sur. No. 103. 10¾-in. csg. 1,945 ft.; drlg. sh. 2,130 ft.

Sun Oil Co. No. 3-A White, H.T.&B. Sur. No. 118. R.U.

Turtle Bay—Chambers County

Stanolind O. & G. Co. No. 6 Silvas S. Burney Sur. Drlg. sh. 1,530 ft.

Stanolind O. & G. Co. No. 1-38 State (6,000 ft. S of field in Turtle Bay) 10¾-in. csg. 1,212 ft.; T.D. 8,530 ft.; 5½-in. csg. 6,673 ft.

Hitchcock—Galveston County

Maco Stewart No. 10 fee, J. Spillman Sur. No report.

League City—Galveston County

Mid-States Oil Co. No. 1-A, Maco Stewart, Perry & Austin Sur. T.D. 9,310 ft.; 7-in. csg. 9,310 ft.

George Echols No. 1 Maco Stewart-Ross, Lot 3, Perry & Austin Sur. T.D. 9,119 ft.; perf. csg. 9,059-92 ft.; flwg. oil and wash wtr.; perf. csg. 8,994-9,006 ft.; flwd. oil and S.W.

George Echols No. 1 Maco Stewart, Perry & Austin Sur. Drlg. sh. 4,030 ft.

Phillips Pet. Co. No. 1 Dr. Patton, S. F. Austin Sur. Drlg. sh. 7,743 ft.

Phillips Pet. Co. No. 1 Stewart, Title Guaranty, S. F. Austin Sur. R.U.

West Prod. Co. No. 1 fee, Lot 2, Blk. 5, Perry & Austin Sur. Loc.

Bammel—Harris County

H. M. Lawrence and Geo. Lawrence No 1 C. Ehrkardt, H. Simmons Sur. R.U.

Clinton—Harris County

Stanolind O. & G. Co. No. 2 Edwards Reels & Trobough Sur. Drk.

Eureka—Harris County

Jack Frazier No. 1 Emma Helberg, J. Reinerman Sur. T.D. 8,113 ft.; run csg.

Houston Oil Co. No. 3 Helberg & Lackner, J. Reinerman Sur. Loc.

Tide Water Asso. Oil Co. No. 1 M. A. Roy, J. Reinerman Sur. Cg. sh. 8,140 ft.

Fairbanks—Harris County

Amerada-Stanolind O. & G. Co. No. 1 Ariola, G. Williams Sur. 9¾-in. csg. 1,217 ft.; T.D. 6,845 ft.; W.O.C.

Amerada-Stanolind O. & G. Co. No. 2 Peters, W. K. Hamblin Sur. and Hogan Sur. T.D. 7,920 ft.; 5½-in. csg. 7,-548 ft.; perf. csg. 6,963 ft.; tstd. S.W.; reperf. csg. 6,964-68 ft.; flwg. oil and S.W.; tstg.

Amerada-Stanolind O. & G. Co. No. 1 G. W. Stinson Sur. T.D. 6,856 ft.; 5½-in. csg. 6,855 ft.

E. M. Hailey No. 1 Albert Brown, J. Clarkson Sur. Loc.

Housh-Thompson No. 1 Yerkes, Sam Lewis Sur. Drlg. sh. 1,536 ft.

Sinclair Prairie Oil Co. No. 2 Goodykoontz, Wiley S. Powell Sur. Drlg. sh. 2,136 ft.

Friendswood—Harris County

Humble O. & R. Co. No. 25 Beamer, T. Choate Sur. Drlg. sh.&L. 4,560 ft.

Humble O. & R. Co. No. 17 Gray, Perry & Austin Sur. Drlg. sh. 3,217 ft.

Humble O. & R. Co. No. 1 J. L. Jones, Perry & Austin Sur. Drk.

Humble O. & R. Co. No. 1 G. C. Ruby, T. Choate Sur. Drlg. sh. 5,410 ft.

Humble O. & R. Co. No. 3 Settegast, T. Choate Sur. Drk.

Humble O. & R. Co. No. 1 E. E. Watson Drk.

Humble O. & R. Co. No. 6 West, T. Choate Sur. Drlg. L. 3,212 ft.

Cordele—Jackson County

H. J. Porter No. 1 Woussi, Peter White Sur. Loc.

Clam Lake—Jefferson County

Shell Pet. Corp. No. 1 McFaddin, S. A. Pace Sur. R.U.

LaBelle—Jefferson County

Sun Oil Co. No. 4 Broussard-Hebert, B. Blackman Lge. T.D. 8,675 ft.; 7-in. csg. 8,605 ft.; pmpg. wtr. into hole to kill press. in No. 3 Broussard; made sqz. job; dpnd. 8,680 ft.; fsg. for D.P milling out of csg. 8,466-70 ft.; T.D. 8,795 ft.; D.S. stk.; fsg.

Hardin—Liberty County

Atlantic Ref. Co. No. 3-B Johnston-Finley, H. B. Johnston Sur. Drlg. sh. 2,-060 ft.

Gulf Oil Corp. No. 4 Cessna, H. B. Johnston Sur. R.U.

Humble O. & R. Co. No. 8 Partlow, H. B. Johnston Sur. Drlg. sh. 7,683 ft.

Shell Pet. Corp. No. 1-B West, A. B. Hardin Sur. Cg. 7,596 ft.

Smith & McDannald No. 3 Rives, A. B. Hardin Sur. R.U.

Texas Co. No. 1 Humphrey, F. Hardin Sur. R.U.

Woodley Pet. Co. No. 1 Humphries, F. Hardin Sur. T.D. 7,676 ft.; 5½-in. csg. 7,624 ft.

Woodley Pet. Co. No. 2 Humphrey, F. Hardin Sur. R.U.

Orange—Orange County

Gulf Oil Corp. No. 4 Granger, Wm. Dyson Sur. Drlg. sh. 1,730 ft.

Orange Pet. Corp. No. 1 Chesson, Wm. Dyson Sur. 5½-in. csg. 5,529 ft., T.D.

John G. Mayo No 1 Seales, Wm. Dyson Sur. 10¾-in. csg. 1,000 ft.; T.D. 6,179 ft.; sanded up; reset lnr.; tstg.

Red Bank Oil Co. No. 1 First Natl. Bank, Wm. Dyson Sur. Perf. csg. 5,625-29 ft.; flwd. gas and dist.; tstg.

Segno—Polk County

Gulf Oil Corp. No. 5 Ragan, I.&G.N. Sur. No. 15. Loc.

Gulf Oil Corp. No. 15 Wing, I.&G.N. Sur. No. 13. R.U.

Humble O. & R. Co. No. 10-B Kirby Lbr. Co., M. Victor Sur. Drlg. sh. 4,-017 ft.

Spurger—Tyler County

Republic Prod. Co. No. 14 Hurd, N. Hurd Sur. Drlg. sh. 7,436 ft.

GULF COAST WILDCATS

Austin County

Crown Cent. Pet. Corp. et al No. 1 Huebner, Renkestolz Sur. Loc.

Brazos County

N. W. Hunter No. 1 Jerichew, E. M. Millican Sur. Drlg. sh. 2,537 ft.

Brazoria County

Fabriguze et al No. 1 Freeport Sulphur, Stephen F. Austin Sur. (Bryan Mound). M.I.M.

Gray, Wolfe and Mavo No. 1 Joe D. Hughes, F. B. Drake Sur. Drlg. sh. 5,628 ft.

Humble O. & R. Co. No. 1 Masterson.

Geo. Robinson Sur. 13⅜-inch csg. 2,402 ft.; drlg. sh. 9,107 ft.

Chambers County

Geo. Anderson No. 1 Julia Casey, W. D Smith Sur. Loc.
Moore & Ahern No. 1 E. Maley, Ben Winfree Sur. Spd.

Colorado County

Coyle & Concord No. 4-B Powell, I.&G. N. Sur. No. 45. R.U.

Harris County

C. L. Dobbins et al No. 1 Ridgeview Farms, D. Steele Sur. 10¾-in. csg. 840 ft.; T.D. 6,501 ft.; abd.
Jack Frazier et al No. 1 W. T. Carter. Talcott Patching Sur. T.D. 4,717 ft.; fsg.
Jack Frazier et al No. 1 Griffith, Adams Smith Sur. T.D. 8,348 ft.; P.B. 4,088 ft.; 5½-in. csg. 4,090 ft.; perf. csg. 4,073-77 ft.; started showing S.W.; went dead; reperf. csg. 4,070-77 ft.; tstd. oil and S.W.; perf. csg. 4,078-81 ft.; would not flow; swbd. oil and S. W.; abd.
H. H. Givens No. 2 F. K. Adone, David Middleton Sur. Drk.

Jackson County

Chapman Minerals Corp. No. 1 Bennett rnh., Valentine Garcia Sur. T.D. 6,214 ft.; abd.

Jefferson County

British American Oil Co. et al No. 2 Gladys City, J. A. Veatch Sur., SW flank Spindletop dome. Spd.
I. E. Harwell No. 1 State, Gulf of Mexico. T.D. 5,840 ft.; D.S. stk.; pulled in two; S.D.
Humble O. & R. Co. No. 2 Jefferson Ld. Co., C. Hillebrandt Sur. Top oil sd. 7,700 ft.; T.D. 7,720 ft.; run csg.
Humble O. & R. Co. No. 13-B McFaddin-State, Sec. 8. 10¾-in. csg. 2,758 ft.; T.D. 4,557 ft.

Matagorda County

Maja Oil Co. No. 1 Robbins, A. Sheppard Sur. R.U.
Sun Oil Co. No. 1 Cavallin, Theo. F. Koch subd., John Duncan Sur. Spd.

Montgomery County

Housh & Thompson No. 1 E. B. Clary, Wm. S. Allen Sur. T.D. 4,739 ft.; 7-in. csg. 4,736 ft.; flwg. dry gas, volume test through ⅜-in. ck. 3,420,000 ft.
H. A. Pennington et al No. 1 F. L. Banker, L. M. H. Washington Sur. Drlg. 1,012 ft.; no report.
J. Smith et al No. 1 J. V. Scott. F. A. B. Wheeler Sur. S.D. 380 ft.

Orange County

Sun Oil Co. No. 1 Lutcher-Moore Lbr. Co., B. Johnson Sur. T.D. 7,867 ft.; P.B.; sdtrkd.; T.D. 9,402 ft.; run csg.

S. W. TEXAS WILDCATS

Atascosa County

R. C. Stanley No. 1 Schumann, Simon Malone Sur. No. 1069. T.D. 1,722 ft.; perf. csg. 1,650-75 ft.; perf. csg. 1,654-76 ft.; flwd. fresh wtr.; S.S.O.; S.D.

Bastrop County

Ira Brown No. 1 T. W. Bailey, John Crutchfield Sur. No. 12. Drlg. chk. 2,780 ft.
R. C. Franklin No. 2 Yarrington, Jose Manuel Bangs Sur. S.D. 2,150 ft.
Marts & Beaven No. 1 Doherty, John Maxmillian Sur. Drlg. chk. 2,525 ft.

Bell County

M. M. Gordon No. 1 Steele, Oliver T. Tyler Sur. S.D. 1,201 ft.
G. P. Shelton et al No. 1 Nelson, Michael Griffin Sur. S.D. 1,160 ft.

Bexar County

H. G. Krumm No. 1 Kempf, Samuel McCollough, Jr., Sur. No. 54. Drlg. 467 ft.
L. G. Priest et al No. 1 E. B. McCollough, Stephen Jett Sur. T.D. 1,004 ft.; will test on pmp.
Charles Schreiner No. 1 McCloskey, L. Desague Sur. No. 134. T.D. 1,100 ft.; run lnr.; tstg.
David Stiles No. 1 Minna Sherrer. Jos Antonio de la Garza Sur. R.U.
Joe Wagner et al No. 1 Florence Lamm, Manuel De Luna Sur. No. 3. R.U.

Blanco County

D. M. Johnston No. 1 Glasscock, W. W. McDonald Sur. No. 50. 10-in. csg. 150 ft.; S.D. 501 ft.
E. L. Nixon No. 2 Crist, John McClenechen Sur. No. 94. Drlg. sh. 215 ft.

Brooks County

Humble O. & R. Co. No. 1 McGill Bros., Ygnacios Rivas, La Blanca gr. Drlg. sh. 4,669 ft.

Caldwell County

S. T. Dudley et al No. 1 Becker, L. L. Joseph Sur. Drlg. sh. 1,327 ft.

Calhoun County

Hiawatha O. & G. Co. No. 2 J. J. Roemer, J. Ogesberry Sur. T.D. 10,015 ft.; P.B. 8,550 ft.; tstg. at 7,800 ft.

De Witt County

Richardson et al No. 1 W. D. McCurdy, John Hunt Sur. T.D. 150 ft.

Duval County

Harry Fansler No. 1 Benavides, El Mesquite gr. T.D. 3,036 ft.; abd.
Magnolia Pet. Co. No. 1 Duval Co. Rch. Co., G.C.&S.F.R.R. Sur. No. 189. Tstd. S.W. in Cole sd.; drlg. sh. 2,110 ft.
J. J. O'Hern No. 1 S. Benavides, G.C.& S.F.R.R. Sur. No. 169. 10-in. csg. 42 ft.; T.D. 4,125 ft.; abd.
S. K. & C. et al No. 2 Welder, Nathaniel Tinsley Sur. 10-in. csg. 19 ft.; T.D. 3,072 ft.; abd.
S.K.&C. et al No. 3 Welder, Nathaniel Tinsley Sur. Loc.
W. A. Wagner No. 1 D. J. Weikel, John H. Gibson Sur. No. 497. R.U. and S.D.

Edwards County

Evans & Love No. 1 Steve Brown, Blk. 6, G.W.T.&P. Sur. S.D. 6,261 ft.

Frio County

Humble O. & R. Co. No. 2 Houston, Conrad Die Sur. 161. Drlg. sh. 2,936 ft.
Geo. Smith No. 1 Berry, T.C.R.R. Sur. No. 1. T.A.C. 4,445 ft.; T. Edws. L. 5,097 ft.; T.D. 5,163 ft.; D.S.T. 5,133-63 ft.; tstd. blk. sulf. wtr.; abd.

Goliad County

J. D. Brock et al No. 1 Dial, Pedro Trevino Sur. S.D. 5,010 ft.
Steinberge Pet. Corp. No. 1 Albrecht. T. Hancock Sur. T.D. 5,313 ft.; 5⅛-in. csg. 5,313 ft.; perf. csg. 5,238-44 ft.; flwg. 1 bbl. oily mud and S.W. per hr.

Gonzales County

Hochheim Dev. Trust No. 1 Dubose, E. G. Coffman Sur. 10-in. csg. 37 ft.; S.D. 500 ft.
John Hueners et al No. 1 Bauer, R. E. Brown Sur. S.D. 1,017 ft.
A. L. Mitchell and L. W. Sorrell No. 1 A. I. Culpepper. R.U.

Guadalupe County

J. E. Clark No. 3 Anderson, Green Dewitt Sur. Drlg. 596 ft.
Frank Glenn No. 1 Appling, Harriet Cottle Sur. No. 14. T.D. 2,218 ft.; tstg. 2,-130-37 ft.
R. Hamil et al No. 1 E. Zuehl, Vicente Duran Sur. No. 4. 10-in. csg. 21 ft.; T.D. 622 ft.; abd.
Joseph Holefield No. 1 Claud Brodnax, John King Sur. Spudded and S.D.
A. D. King No. 1-A Rosenbrock, Vincente Duran Sur. No. 4. T.D. 1,882 ft.; Buda L.; 6-in. csg. 991 ft.; swbg. and flwg. 3 B.O.P.H.; started showing S.W.; cmtd. off bttm. of hole; swbg.
E. H. Robertson No. 1 Alex Forshage, Eligio Gortari Sur. No. 16. Drlg. limestone 2,190 ft.
R. A. Williams No. 1 Weber, Guadalupe Torres Sur. T.D. 1,483 ft. (cor.); 4½-in. csg. 1,468 ft.; fsg.

Hidalgo County

R. E. Hardin et al No. 1 E. M. Car. Hidalgo Co. Canal Subd., Lot 8, Blk 8. T.D. 7,509 ft.; perf. csg. 7,440-65 ft.; tstd. 500,000 ft. gas, 9 bbls. dist.; W.P. 1,700 lbs.; killed well; reperf. csg. 6,918-30 ft.; tstd. dist.; reperf. csg. 6,515-25 ft.; flwd. dist.; will perf. csg. higher; tstg.
Union Sulphur Co. No. 1 Am.-Rio Grande Ld. & Ir. Co. (Mercedes). Cmtd. 7-in. csg. 8,417 ft.; T.D. 9,618 ft.; 5⅛-in. lnr. set 8,369-9,618 ft.; tstd. S.W. 9,-420-30 ft.; made sqze. job; P.B. 9,390 ft.; perf. csg. 9,372-80 ft.; swbd. S.W. and gas; perf. csg. 9,347-52 ft.; tstd. S.W.; perf. csg. 9,255-80 ft.; tstd. S. W.; perf. csg. 9,065-70 ft.; tstd. S.W.; perf. csg. 8,990-9,000 ft.; tstd. S.W.; perf. csg. 8,920-25 ft.; tstd. S.W.; perf. csg. 8,845-50 ft.; flwd. 24 bbls., 51-grav. dist. per day; ¾-in. ck.; killed to reperf.; sqz. off perf.; prep. to test 8,500-10 ft.; tstd. gas and S.W.; sqzd. perf. csg. 8,430-90 ft.; tstd. gas and S.W.; sqzd.; reperf. csg. 8,075-80 ft., tstd. 450 bbls. fluid, 45 bbls. 22.7 grav. oil; sqzd. off perf.; perf. csg. 7,920-25 ft.; perf. csg. 7,430-40 ft.; flwd. 35 bbls. dist.; ⅝-in. ck.; perf. csg. 7,440-50 ft.; flwd. dist.

Jim Hogg County

Humble O. & R. Co. No. 4 Bass, San Rafel Flores. Cg. sh. 4,310 ft.
Johnson & Robinson No. 1 Palacios, Mary Montgomery Sur. T.D. 5,005 ft.
Navarro Oil Co. No. 1 Guerra, Santa Teresa gr. (7,000 ft. SW discovery. Kelsey field). 10¾-in. csg. 1,231 ft.; cg. 4,820 ft.

Jim Wells County

Ark. Fuel Oil Co. No. 1 Blinka, M. Mareera gr. R.U.
Tom Graham et al No. 1 Chas. Hirsch, Jacob Stanfert Sur. T.D. 5,776 ft.; 5½-in. csg. 4,689 ft.; will test 4,604-20 ft.
Magnolia Pet. Co. No. 1 Samuel Maun, Los Olmos y Loma Blanca gr. Cg. 5,-346 ft.
W. H. Mathews No. 1 Frances Clark, Los Precenos gr. R.U.
Shell Pet. Corp. No. 1 C. H. Von Blucher, Lucinda Best Sur. T.D. 7,332 ft.; 7-in. csg. 7,332 ft.; perf. csg. 7,327-30 ft.; T.D. 7,832 ft.; fsg.

Karnes County

M. W. Brown et al No. 1 Yanta, S. G. Hardaway Sur. S.D. 2,778 ft.
Formax Oil Co. No. 1 Pflugger, Erasmus Seguin Sur. S.D. 1,969 ft.
Suttle et al No. 1 McKinney, Luz Navarette Sur. Loc.

Kendall County

Carpenter No. 1 Seidensticker, A. Rodriquez Sur. No. 257. S.D. 518 ft.
C. M. Dewey No. 1 Seidensticker, J. M. Cherino Sur. 18. T.D. 520 ft.; abd.
H. N. Reid No. 1 Marguardt, J. Travuso Sur. No. 150½. T.D. 985 ft.; fsg.

Kerr County

J. O. Hart et al No. 5-E Jeff Love, J. Martinez Sur. O.W.D.D. T.D. 5,677 ft.; S.D.
H. C. Starkey No. 1-A Saue, T.W.N.G. R.R. Sur. S.D. 100 ft.; T.A.

Kimble County

Plateau Oil Co. No. 1 S. J. Davis, N. Mitchell Sur. No. 44. S.D. 1,140 ft.
Plateau Oil Co. No. 1 Hunger, J. Dujner Sur. 5½-in. csg. 1,765 ft.; drlg. 2,-083 ft.

Kinney County

Bob Rose No. 2 Gaebler, Dolores Soto de Beales gr. S.D. 225 ft.
C. B. Wardlaw No. 1 Standart, Meilton Valdez gr. T.D. 1,402 ft.; tstg.

La Salle County

Lake-Tobian Oil Co. No. 1 O'Connor ranch. Blk 35, Bland & Nelson subd. S.D. 3,615 ft.

Lavaca County

A. C. McCord et al No. 1 Cora Russek. Blk. 33, J. C. Reynolds Sur. (S. of Ezzell). Spd. and S.D.

Lee County

Fred Pederson et al No. 1 Brown. David Hudson Sur. T.D. 6,404 ft.; acd.; no results; S.D.

Live Oak County

Brown and Dovre No. 1 Mary F. Hewitt, Thos. Adams Sur. T.D. 1,542 ft.; abd.
R. H. Feltner No. 1 Reed, I.&G.N. R.R Sur. 15. R.U.

McMullen County

Edward Wilkins No. 1 D. W. Rhodes, B. S.&F. Sur. No. 27. Drlg. 1,200 ft.
Loma Oil Co. No. 1 Edrington A. B. & M. Sur. No. 79. T.D. 1,823 ft.; run csg.
Scarborough & Biglane No. 1 Matuis Emmitt, Jas. Garner Sur. No. 6. T.D. 880 ft.; C.O.

Maverick County

Wellington Oil Co. of Delaware and Humble O. & R. Co. No. 2 Indio Cattle Co. Antonio Rivas Grant. Cuevas Pasture No. 2. Drlg. 2,016 ft.

Medina County

Victor Ziegler No. 1 Paul Haby, Wm. G. Still Sur. No. 1. T.D. 81 ft.

Milam County

McGuyer and McCormick No. 1 Jacob. Jose Leal Sur. Drlg. sh. 200 ft.; no report.

Nueces County

L. A. Douglas No. 1 L. E. Smith, C.E.I.P.& M. Sur. No. 459. T.D. 6,512 ft.; abd.
Humble O. & R. Co. No. 1 Michalek. Lots 4 and 5, Sec. 97, Bishop Out Lot subd. T.D. 7,316 ft.; abd.
O. W. Killam No. 1 N. O. Chapman, Laureles Farm tr., Sec. 22. Drlg. sh. &sd. 1,225 ft.
Renwar Oil Co. et al No. 1 Eschberger. Nueces River Irrig. Park subd. Drlg. sdy. sh. 1,975 ft.
Stanolind O. & G. Co. No. 1 Geo. R. Clark, Nueces Co. Winter Vegetable Gardens. T.D. 7,015 ft.; perf. csg. 4,-883-93 ft.; comp. as gas well.
Texas Co. No. 1 E. Little et al, Wm. Little Sur. 10¾-in. csg. 1,174 ft.; T.D. 7,746 ft.; P.B.; T.D. 7,751 ft.; abd.
Trinity Drillers, Inc., No. 1 L. E. Smith, C.E.P.I.&M. Sur., Sec. 6, Blk. "C." T.D. 6,512 ft.; abd.
Union Prod. Co. No. 1 Minnie Brow (Agua Dulce area). Drlg. sh. 13,220 ft.

Real County

Blakely Smith et al No. 1 Love Ranch. H.E.&W.T.R.R. Co. Sur. Drlg. 495 ft. no report.

Refugio County

G. S. I. et al No. 6 Rooke, Aldrete 6¼ Lge. R.U.
Hewitt & Dougherty No. 2 Rooke, Aldrete 6¼ Lge. Drlg. 1,500 ft.
Phillips Pet. Co. et al No. 1 Emilie Paveleck, Aldrete 6¼ Lge. Drlg. sh. 1,-860 ft.
Rutherford Oil Corp. No. 1 Neiman, Estaban Lopez Sur. T.D. 6,505 ft.; 5½-in. csg. 5,300 ft.
Shields Oil Co. et al No. 1 C. F. Sasse, Aldrete 6¼ Lge. T.D. 6,330 ft.; perf csg. 6,325-29 ft.; I.P. 190 B.P.D.; 5/32-in. ck.

Starr County

Pistol Hill Oil Co. No. 1 Alvarez, J. J Guiterrez, Porc. 72. T.D. 950 ft.; abd.
Rhinehart and Bowman No. 1 Bowman J. C. McCarty Sur. Loc.
Sun Oil Co. No. 2 McKinney, A. J. Smith Sur. No. 242. Cg. 4,937 ft.
Sun Oil Co. No. 3 McKinney, A. J. Smith Sur. No. 242. Drlg. sh. 4,412 ft.
Sun Oil Co. No. 1 N. R. Montalvo, Los Retachez gr., Juan Jose Sais Sur. No. 347. Drlg. sh. 4,212 ft.
Transwestern Oil Co. No. 1 Dallas Jt. Stk. Ld. Bnk., Gavino Silvas Sur. 9⅝-in. csg. 1,439 ft.; S.D. 5,025 ft.

Webb County

Harvey & Henderson No. 2 Benavides, J. Poitevent Sur. No. 459. Drlg. sh. 1,970 ft.
Houser and Campbell No. 2 Puig, Edrington subd. of Aberca De Arriba gr. S.D. 1,176 ft.
Richardson Pet. Co. No. 1 A. M. Bruni, H.&G.N.R.R. Sur. No. 17. Loc.

Williamson County

L. B. Burnette, Jr., Tr., No. 1 D. C. Reed, E. Leichtle Sur. Drlg. sh. 936 ft.
H. H. Coffield and Taylor Ref. Co. No. 2 Caller, H.T.&B. Sur. No. 7. Drlg. 1,-612 ft.

Zapata County

Joe Martinez No. 1 F. Zaragosa, J. V. Borego gr. T.D. 1,340 ft.; fsg.

EAST TEXAS

(Border Counties)

Harrison County

F. H. Barnwell No. 1 Smith, A. P. Hope Sur. Cg. 2,830 ft.; D.S.T. 2,280 ft. tstd. dry; ran 5-in. csg. 2,300 ft.
W. S. King No. 1 Taylor, Martin Sur. R.U.

Marion County—Rodessa

Ark.-La. Gas Co. No. 1 E. Crawford, A. D. S. Coy Sur. 10¾-in. csg. 1,017 ft.; W.O.C. 2,486 ft., in sh.
Ark.-La. Gas Co. No. 1 Moseley, Alex Johnson Sur. D.S.T. 5,969-93 ft.; tstd. 20,000,000 ft. gas in 6 min.; used 3,-000 gal. acd.; well cleaning; est. 10,-000,000 to 12,000,000 ft. gas; 5½-in. csg. 6,056 ft.; T.D. 6,060 ft.
Cable Tool Drlg. Co. No. 1 Howard, John Hanks Sur. Set 5½-in. csg. 6,058 ft.; T.D. 6,084 ft.; used 2,000 gal. acd.; tstg.
Cable Tool Drlg. Co. No. 1 Schellinger John Hanks Sur. 5½-in. csg. 6,053 ft.; W.O.C.; T.D. 6,096 ft.
Gulf Prod. Co. No. 2-A Ray, John Hanks Sur. 9⅝-in. csg. 1,967 ft.; D.S.T. 6,060-80 ft.; tstd. 122 ft. fluid; S.O. in 22 min.; ¾-in. cks. T.&B.; set 5½-in. csg. 6,080 ft.; perf. 6,060-78 ft. and tstd. S.G.; used 3,000 gal. acd.; T.D. 6,080 ft.; comp.; flwd. 110 B.O. in 10 hrs.; ⅛-in. tbg. ck.; T.P. 0; C.P. 750 lbs.
G. Scott Hammond No. 1 W. S. Ford, C. Grayson Sur. 9⅝-in. csg. 1,262 ft.; csg. seat would not hold; skd. 24 ft. east and drlg. 2,732 ft. in 2nd hole.
Harry Hanbury No. 1 Davis, W. R Meyer Sur. Cg. 5,777 ft., for Gloyd form.
Phillips Pet. Co. No. 2 Henderson, T. Gillespie Sur. Set 7-in. csg. 6,073 ft.; W.O.C. 6,090 ft.
Shell Pet. Corp. No. 1 Stephenson, G. Perry Sur. 8⅝-in. csg. 1,013 ft.; 5-in. csg. 5,991 ft.; perf. 5,973-90 ft.; swbg. to test 5,996 ft.
Shell Pet. Corp. No. 2 Whelan, Thos. Gillespie Sur. Drlg. L. 4,221 ft.

Marion County—Other

Capps Bros. Lbr. Co. No. 2 Stiles, Wall Sur. T.D. 2,394 ft.; swbd. dry; shot with 2 qts. nitro at 2,334 ft.; tstd. dry; S.D. 2,394 ft.

Sabine County

Hugo Allen No. 1 Brooks, Isaac Low Sur. S.D. 5,885 ft.; flows ½ to 3 bbls. 41-grav. oil and goes dead; C.P. 500 lbs.; will attempt to comp. as gas well.

San Augustine County

Superior Oil Co. et al No. 1 Long Bell Lbr. Co., S.P.R.R. Sur. 10¾-in. csg. 440 ft.; drlg. 2,327 ft.

Shelby County

Redditt & Gray No. 1 Pickering Lbr. Co., Childers Sur. Set 7-in. 5,080 ft.; T.D. 5,139 ft.; making est. 100,000,000 ft. gas with 55-grav. brown dist.; C.I.C.P. 2,500 lbs.; C.I.T.P. 2,300 lbs.; flwg. 3 B.P.H. crude and 7,000,000 ft. gas.

WEST TEXAS WILDCATS

Andrews County

Anderson & Prichard-Osage Drlg. No. 1 Univ., Sec. 13, Blk. 14, Univ. Sur. Drlg. 3,460 ft.
Rogers & Rogers No. 1-B University, Sec. 20, Blk. 9, Univ. Sur. Drlg. 1,-205 ft.
Honolulu Oil Corp. No. 1-18 J. E. Parker, Sec. 18, Blk. A-44, P.S.L. Sur. Drlg. 2,440 ft.
Olson Drlg. Co. No. 1 Lockhart-Brown, 5 mi. W of S end of Fuhrman pool. S.D.O. 4,981 ft.
Texas Co. No. 1-H University, Sec. 4, Blk. 14, Univ. Sur. P.B. 4,082 ft.; prep. to perf.; comp.; 1,600,000 ft. gas.
J. W. Trippiehorn No. 1 M. A. Thornberry, Sec. 2, Blk. 42-A. S.D.O. 4,476 ft.
H. C. Wheeler, No. 1 White-Shelton, Sec. 18, Blk. 36-A, P.S.L. Sur. S.D.O. 4,081 ft.

Cochran County

T. G. Shaw No. 1 Carrie S. Dean, Lge. 94. Bldg. drk.

Coke County

Barnett Pet. Co. No. 1 J. R. Mims, Sec. 39, Blk. W, T.&P. Sur. S.D. 1,861 ft.

Crane County

Standard O. of Texas No. 1-4 University, Sec. 4, Blk. 30, Univ. Sur. Drlg. 90 ft.

Culberson County

Quito Oil Co. No. 1 Cameron Lbr. Co., Sec. 24, Blk. 81, P.S.L. Sur. S.D.R. 945 ft.

Dawson County

Daw-Tex. Oil No. 1 J. E. Neely, Sec. 28, Blk. 35, T.&P. Sur. Drlg. 1,976 ft.

Dickens County

Bond D. Jones No. 1 Ford et al, I.&G.N. Sur. S.D. 3,508 ft.
Humble O. & R. Co. No. 1 Matador Ld. & Cattle Co., Sec. 26, Blk. 1, Shock &

Arnold Sur.; 6,000-ft. test. Fsg. bit 2,180 ft.

Ector County

Fields et al No. 1 Owenwood, Sec. 6, Blk. 44, T.&P. Sur. S.D.O. 4,501 ft.

El Paso County

Tri-State Oil Co. No. 1 Kinkel, S.D. 3,571 ft.

Garza County

Gulf Oil Corp. No. 1 Swanson, Sec. 25, Blk. 2, H.&G.N. Sur. Flwd. 148 B.O. in 9 hrs.; P.B. depth of 7,400 ft.; tstg. 7,352 ft.

Glasscock County

Crusader Pet., Inc., No. 1 A. D. Neal, Sec. 20, Blk. 33, T.&P. Sur.; 3,200-ft. test. Drlg. 2,538 ft.

Hudspeth County

Haymon Krupp Oil & Ld. Co. No. 1 Thaxton, SE¼ Sec. 34, Blk. 74, Twp. 6. Drlg. 5,264 ft.
Haymon Krupp No. 1 Briggs, Sec. 24, Blk. 73, Twp. 7, T.&P. Sur. S.D. 5-in. 5,364 ft.

Jeff Davis Parish

H. D. Wilcox No. 2 Jones-Coffield, Sec. 308, Blk. 4, H.&T.C. Sur. Drlg. 270 ft.

Lynn County

John L. Baldridge No. 1 Alma Lbr. Co., Sec. 151, H.E.&W.T. Sur. W.O.C. 4,450 ft.

Menard County

C. D. Haggerty No. 1 Callon, Sec. 36, Jim Franz Sur. Tools out; making 500,000 ft. gas 1,270 ft.; D.&A. 1,270 ft.

Mitchell County

Ajax Drlg. Co. No. 1 Schustes, Sec. 25, Blk. 17, S.P.R.R. Sur. U.R. 1,718 ft.

Pecos County

G. T. Abell et al No. 1 Baldwin Est., Sec. 24, Blk. 9, H.&G.N. Sur. Drlg. 720 ft.
J. R. Bell No. 1-C Gulf-Shearer, Sec. 11, Blk. 10, H.&G.N. Sur. Drlg. 810 ft.
Childress Royalty No. 1 Humble-Shearer, Sec. 103, Blk. 10, H.&G.N. Sur. R.U. spudder.
O. E. Schade No. 1 Neville, Sec. 72, Blk. 194, G.C.&S.C. Sur.; 2,500-ft. test. S.D.; csg. 1,941 ft.
O. E. Schade No. 1 Otis Garrett, Sec. 59½, Blk. 8, H.&G.N. Sur. S.D. 200 ft.
Thomason Prod. Co. No. 1 Notions, Sec. 1, Blk. 105, W. P. Howard Sur. C.O. 900 ft.
S. Thompson No. 1 Elsinore Cattle Co. Sec. 54, Blk. D, G.C.&S.F. Sur. Drlg. by pipe 6,965 ft.

Reeves County

Ohio Oil Co. No. 1 Papham, Sec. 18, Blk. 54, T.&P. Sur. Drlg. 5,750 ft.

Schleicher County

Lone Star Gas Co. No. 1 Bert Page, Sec. 30, Blk. L, G.H.&S.A. Sur. Drlg. 415 ft.
Lone Star Gasoline Co. No. 2 Bert Page, Sec. 46, Blk. L, G.H.&S.A. Sur. R.U. S.T.

Scurry County

Coffield & Guthrie No. 1 First Natl., Bk., Snyder, Sec. 29, Blk. 97, H.&T.C. Sur. M.I.M.
Coffield & Guthrie No. 1 E. E. Spears et al, Sec. 130, Blk. 97, H.&T.C. Sur. Tstg. 2,366 ft.; P.B. depth.
Forest Dev. Co. No. 1 J. J. Koonsman, Sec. 217, Blk. 2, H.&T.C. Sur. W.O.C. 295 ft.

Tom Green County

Spinner No. 1 Reed, Mason Ferry Ranch Sur. W.O.C.; cave 4,948 ft.

Upton County

White & Wilson No. 1 Webb, Sec. 176, Blk. 1, C.C.S.D.&R.G.N.G. Sur. U.R. 715 ft.

Ward County

Edwards & Donnelly No. 1 J. S. Reynolds, Sec. 34, Blk. 1, H.&T.C. Sur. Prep. U.R. 480 ft.
Robt E. Mitchell No. 1 Allen, Sec. 7, Blk. 32, H.&T.C. Sur. Prep. test; O.& G.S. 2,110 ft.

Winkler County

S. W. Richardson No. 1-A J. M. Broshara, Sec. 22, Blk. 77, P.S.L. Sur. P.B. 3,329 ft.; C.O.; flwd. est. 70 B.O. P.D.

Yoakum County

Shell Pet. Corp. No. 1 J. M. Rutts, Sec. 743. Flwd. 2 B.P.H., 2% oil; tstg. on pmp. 5,256 ft.; made 160 B.P.D.

TEXAS PANHANDLE

Collingsworth County

Tinsley, White & Knoll No. 1 Frank Knoll, Sec. 62, Blk. 16, H.&G.N. Sur. C.&P.
White No. 1 Wischamper, S.D. 2,263 ft.
Johnson No. 1 Taylor, S.D. 875 ft.

Deaf Smith County

Uscan No. 1 Farwell. Tstg. 5,650 ft.

Donley County

Robinson No. 1 Kuteman, Sec. 88, Blk. 20, H.&G.N. Sur. Drlg. 3,872 ft.

Gray County

English No. 1 Eudy, S.D. 3,977 ft.
Trippiehorn No. 2 Webb, Sec. 12, Blk. A-9, H.&G.N. Sur. R.U.S.T.

Kent County

E. Dolman et al No. 1 C. V. O'Keefe, Sec. 50, Blk. 1, 15½-in. csg. set at 140 ft.; drlg. at 180 ft. last report.

Lipscomb County

M. C. Tieman No. 1 Spangle, Sec. 626, Blk. 43, H.&T.C. Sur. S.D. 1,880 ft.

Potter County

Sinclair Prairie Oil Co. No. 1 Bush, Sec. 23, Blk. 6, B.S.&F. Sur., about 3 mi. N of Amarillo; 8,500-ft. test. Drlg. 5,983 ft.

Roberts County

Whitlock No. 1 Cunningham. S.D. 2,817 ft.

E. C. TEXAS WILDCATS

Angelina County

K. L. McHenry No. 1 Humble-fee, T.E. R.R. Sur., ½ mi. SE of Zavalla. Loc.

Cherokee County

J. R. Bunn No. 1 S. W. Lang, Levi Jordan Sur., 7 mi. S of Rusk. Drlg. 4,948 ft.
C. C. Lanier No. 1 A. T. O'Neal, J. M. Procella Sur., 3 mi. E of Troup. Drlg.

Collins County

G. L. Pace Pet. Co. No. 1 E. E. Hooper, J. Rutherford Sur., 2 mi. E of Blue Ridge. Cg. 2,590 ft.

Falls County

W. H. Mahon No. 1 V. H. Moore, N. K. Robinson Sur., between Lott and Rosebud. S.D.O. 315 ft.

Grayson County

Jim McMurrey No. 1 Dr. T. J. Long, J. Garland Sur., 2 mi. S of Collinsville; 4,000-ft. test. S.D.O. 3,929 ft.

Henderson County

J. V. Scrivenor No. 1 Wm. Richardson Est., F. Holland Sur., 6 mi. NW of Athens. Drlg. 3,590 ft.
Tide Water-Seaboard-Humble No. 1 Sadie Starr McGee, R. Acosta Sur., 3¼ mi. NE of Murchinson. Drlg. 6,364 ft.

Houston County

John G. Mayo and Cook No. 1 J. H. Klob, Fred Hemmeger Sur., 2 mi. N of Grapeland. Loc.
John G. Mayo No. 1 E. C. Lively, S. Rogers Sur., 4 mi. NE of Grapeland. D.&A.
John G. Mayo and Cook No. 1 Ida Walling, Ben Baker Sur. Loc.
Wynne Drlg. Co. No. 1 May Price, T. Strother Sur., 4 mi. W of Grapeland. S.D.; W.O. 6,112 ft.

Kaufman County

Sam Knoerr No. 1 J. B. Hunter, P. Walker Sur., 5 mi. S of Terrell. Drlg.
W. S. McGee No. 1 Pritchett, J. Hendricks Sur., 7 mi. W of Mabank. D.& A. 3,104 ft.

Lamar County

Dahl Bros. & Barr No. 2 McQuiston, R. Russell Sur., ½ mi. N of Paris. S.D 30 ft.

McLennan County

C. E. Porter No. 1 B. D. Burchett, De la Vega Sur., just SE Waco. S.D. 695 ft.

Morris County

V. A. Hughes No. 1 E. Hall, L. Jordan Sur., 5 mi. NE of Daingerfield. Loc.

Rains County

McKinley & Hastings No. 1 McTaggert, B. Milder Sur., 1 mi. W of Emory. S.D. 30 ft.

Red River County

Bentley-Sheppard & Stevens No. 1 So. Pine Lbr. Co., G. S. Parks Sur., 17 mi. N of Clarksville. S.D. 71 ft.

Smith County

J. H. Thomason No. 1 J. W. Bartlett, R. H. Stewart Sur., ½ mi. SE of Jamestown. S.D. 1,879 ft.

Trinity County

C. D. Davis No. 1 J. D. Gibson, A. Donavan Sur., 4 mi. NE of Trinity. Gas blowout 148 ft.; U.R. 1,940 ft.

Van Zandt County

Goody and Richards & Holloway No. 1 Rhodes, L. H. Bass Sur. Loc.

NORTH TEXAS WILDCATS

Archer County

L Sikes No. 1 Walter Ford, T. M. Cecil Sur. A-982. T.D. 4,204 ft.; O.W.D.D. to 5,500 ft.; T.D. 4,437 ft.; B.S.S.O. 4,379-4,400 ft.; cmt. 5-in. liner on bottom and will perforate.
Westmount Oil Co. No. 7 T. J. Dempsey, Sec. 10, D.C.S.L. Sur., O.W.D.D. Perf. csg. 4,139-44 ft.; blg. wtr. and tstg.

Baylor County

British American Oil Prod. Co. No. 1 F. C. Green, T.&N.O. Sur., Sec. 215. Drlg. 3,090 ft.

Cooke County

H. W. Caudle No. 1 E. E. Walker, H. Gilman Sur. Loc.; 5,500-ft. test.
Denver P. & R. Co. No. 1 D. B. Allred, De Los Santos Sur. A-894. S.D.O.; ran Schlumberger; S.S.O. 1,800-30 ft.; 6⅝-in. 1,854 ft.; perf. csg. 1,813-25 ft.; tstg.
Sinclair Prairie No. 2 J. M. Best, T. Toby Sur. A-1054. 6⅝-in. 4,909 ft.; O. S. 4,909-31 ft.; flwd. 1,024 bbls., 24 hrs.

Foard County

Fleetwood & Kaufman No. 1 Prowers, H.&T.C. Sur., Blk. A. Drlg. 2,581 ft.

Grayson County

O. L. McDougal No. 1 Jackson, H. Coffee Sur., Abst. 204; 4,000-ft. test. Fsg. 562 ft.
J. H. McMurray No. 1 T. J. Long, Jas. Garland Sur. A-441. S.D.O. 3,929 ft.; ran Schlumberger; S.S.O. 2,595-2,601 ft.
C. E. Marshall No. 1 F. Christman, M. Ahalt Sur. A-147. S.S.O. 830-38 ft.; tstg.

Jack County

H. R. Lippitt No. 1 S. Franklin, H. Ferguson Sur. A-215. Tstg. S.S. gas 2,825-40 ft.; rng. 5-in. csg.
Noah Daves No. 1 K. D. Baker, Sec. 2709, T.E.L. Sur.; 4,000-ft. test. Recmt. 10-in. at 90 ft.; S.D.O. 2,320 ft.

Montague County

Lobban et al No. 1 Henry Payne, Wm. Donoho Sur. A-178. Drlg. 1,100 ft.
Youngblood & Foree No. 1 J. A. Burnett, J. Lenow Sur. A-433. 6⅝-in. 4,139 ft.; tstg. B.S.S.O. 4,176-98 ft.

Wichita County

F. S. Freeland No. 1 J. D. Cooper, H. Hastie A-92; 4,000-ft. test. Spd. and S.D.

Wise County

H. Jackson No. 1 F. Neeley, Blk. 29, Matagorda Co. Sch. Ld. Spd. and S.D.
H. M. Muse No. 1 F. F. Kaker, Blk. 16, Matagorda Co. Sch. Lds. Plts.

Wilbarger County

Phillips Pet. Co. No. 1 H. C. Shive, Sec. 79, H.&T.C. Sur., Blk. 14, Sat. L. 3,251-62 ft.; S.O.; 6⅝-in. 3,381 ft.; perf. csg. 48 shots; tstg.

Young County

H. M. Leidecker No. 1 J. M. Nall, Sec. 1997, T.E.&L. Sur. Drlg.
Long & Lupton No. 1 A. Crouch, I.&G. N. Sur. A-1460. Drlg. 3,100 ft.
Magnus & McLester No. 1 B. B. Teague, E. S. Colthrop Sur. A-1390. Drlg. 1,201 ft.
Pitzer-West No. 1 Robt. Bulloch, J. P. Hume Sur., Abst. 140. Drlg. 3,970 ft.

WEST CENTRAL TEXAS DISTRICT

Brown County

A. D. Bruce No. 1 L. J. Mauldin, Sec. 15, H.&T.C. Sur. Sp.&S.D.
Art Cox et al No. 1 Lee, G. W. McBee Sur. No. 3. S.D.O. 2,890 ft.
Evans No. 1 J. F. Davis, S. Tull Sur. No. 894. Spd. and S.D.

Callahan County

Dobbs Oil Co. No. 1 Finley, Sec. 75, Bayland Orphans Home Ld. S.D.O. 1,720 ft.
Hal Hughes No. 1 Cooke & Jordan, Geo. Hancock Sur., Sec. 350. Tstg. 4,440 ft.
J. C. Jackson and Doug. Tomlinson, Jr., No. 1 T. J. Thompson, Sec. 30, B.B.B. &C. Sur. Drlg. 1,790 ft.
Roeser & Pendleton No. 1 Chas. Yost, Sec. 18, Blk. 8, S.P. Sur. Drlg. 1,409 ft.
Warren & Kleiner No. 1 Williams, Sec. 304, S.P.R.R. Sur. Tstg. 740 ft.

Coleman County

Arcadia Ref. Co. No. 1 W. R. Roberts, D. J. Holt Sur. Fsg. 2,685 ft.
P. A. Graves No. 1 F. Gillespie, N. B. Walters Sur. S.D.; T.D. 2,380 ft.
E. E. Kirkpatrick No. 1 F. Nixon, Burnett C.S.L. Sur. Drlg. 243 ft.
Lynn & Jordan No. 1 Eades, J. West Sur., 7 mi. SW of Santa Anna. S.D. 415 ft.
S. B. Owens No. 1 Essac Keeney, Jno. H. Woods Sur. No. 483. S.D. 1,972 ft.

Comanche County

Comanche O. & G. Co. No. 1 J. E. McGuire, C. Rockefeller Sur. No. 3. Fsg. 2,590 ft.
O. L. Johnson No. 1 Mrs. W. Jones, Sec. 34, H.&T.C. Sur., Abst. 1610. S.D. 1,721 ft.
Loraine No. 1 Carlisle, Sec. 9, Blk. 2, H.&T.C. Sur. M.I.M.

Eastland County

Dobbs Oil Co. No. 1 Greer, J. E. Hardy Sur., Ellenburger test. S.D. 1,738 ft.
Hickok P. & D. Co. No. 1 Penn, Sec. 468, S.P. Sur. S.D. 4,058 ft.

Erath County

Wayne Chandler No. 1 Chandler, J. W. Moore Sur., Abst. 571. Drlg. 2,940 ft.
Collard No. 1 W. L. Payton, H. Pierson Sur. No. 1, Abst. 1105. S.D. 185 ft.

Fisher County

General Crude No. 1 M. M. Flores, Sec. 212, Blk. 1, B.B.B.&C. Sur. R.U.R.

Hamilton County

Wallace & Vickers No. 1 C. C. Lund, J. P. Bailey Sur. 51. Drlg. 2,117 ft.

Haskell County

Roeser & Pendleton and I.T.I.O. No. 1 M. O. Daugherty, Sec. 19, Wise C.S.L. Sur. S.D.O. 4,700 ft.
Sawyer Drlg. Co. No. 1 A. J. Rowland Est., Sec. 5, Blk. 3, H.&T.C. Sur., 15 mi. E of Stamford. S.D. 4,890 ft.

Hood County

Prince & Miller No. 1 J. H. Andrews, NW cor. of Geo. Sutherland Sur. S.O. at 485 ft.; C.O.

Jones County

Brown Eagle Oil Co. No. 1 Haynes, Sec. 191, Lemuel Andrews Sur. S.D.O. in sd. 2,283 ft.
Brown Eagle No. 1 Waterson, Andrews Sur. No. 191. T.D. 2,283 ft.; S.D.
A. P. Kouri No. 1 W. C. Bennett, Sec. 42, C.A.L. Sur. Drlg. 2,397 ft.
Lucille Manley No. 1 fee, Sec. 4, Blk. 15, T.&P. Sur. T.D. 1,892 ft. in sand; U.R.
S. B. Roberts Co. No. 1 Roy E. Prichard, 205 ft. fr. SL, 2,428 fr. EL, J. E. Cockrell Subd. 2, G. Martinez Sur. 195. Loc.

Nolan County

Chas. E. Peddicord No. 1 Tipton, Sec. 43, Blk. 19, T.&P. Sur. S.D.O. 2,827 ft.
Union Oil Co. No. 1 J. D. Pepper, Sec. 51, Blk. 21, T.&P. Sur.; 5,000-ft. test. 6 mi. SW Sweetwater. Drlg. 3,512 ft.

Parker County

Brown-Gardner Bros. No. 1 Gilbert, T.& P. Sur., Abst. 1958. S.D. 2,175 ft.
Glen Rose No. 1 H. D. Groves, SW¼ Sec. 350, T.&P. Sur. S.D.; T.D. 685 ft.

Shackelford County

Joe DeGrazier No. 1 Harbough, E cen. part of county, Sec. 1563, T.E.&L. Sur. 4,500-ft. test. S.D. 3,894 ft.
Fox & Rudd No. 1 Shotwell, Sec. 59, B.A.L. Sur. Fsg. 1,632 ft.
R. H. Gordon and Frank Pethybridge No. 1 C. B. Snyder, 330 ft. fr. N and E lines, Sec. 38, L.A.L. Sur.; 4,500-ft. test. Est. 20 to 50 B.O.P.D.; T.D. 3,660 ft.; S.D. 4,293 ft.

Taylor County

Roberts & Choate No. 1 A. L. Lindsey, Sec. 22, Guadalupe C.S.L. Sur. T.D. 2,377 ft.; cleaning out; est. 125 B.O. P.D.

Throckmorton County

Beacon O. & R. Co. No. 1 Hawes Est., Sec. 979, T.E.&L. Sur. Drlg. 4,172 ft.
Danciger O. & R. Co. No. 1 C. T. Brockman, Sec. 95, Comanche C.S.L. Sur. Cleaning out 4,716 ft.

Canadian Fields

(Continued from Page 90)

drilling operations are being continued by Dr. Stanley Vegors and I. O. Whitehead of Sault Ste. Marie, Mich. The Vegors-Whitehead syndicate started drilling last July. Tests were drilled on Cockburn Island, Duck Island and on a structure near Gore Bay without success. Later two wells were drilled near Manitowaning, getting small producers in the Trenton limestone around 472 feet, with pumping production of 10 to 12 bbls. each.

A new test was then started on the James Marshall farm in Assiginack Township near Manitowaning. It found oil at 475 feet, which flowed for a short time. The well was acidized, when oil shot 100 feet in the air, with estimated production around 100 bbls. a day. As no storage tanks had been provided, the well was capped temporarily. The two earlier producers have since been acidized, somewhat increasing the output.

The Vegors-Whitehead syndicate is planning to continue drilling through the winter, storing the oil to be marketed to the Sarnia refinery after navigation reopens. The crude is a high-grade product, similar to Oil Springs crude. George Gregory and crew from Petrolia are handling the drilling. Another American group has been leasing acreage, leases being taken on 12½ per cent royalty.

New Union Tanker

The L. P. St. Clair, first unit of Union Oil Co.'s program of replacing with new tonnage its 11-ship tanker fleet, has been launched at the Sparrows Point (Md.) plant of Bethlehem Shipbuilding Corp. It was named in honor of the chairman of the Union Oil Co. board. It was christened by Mrs. St. Clair. With a deadweight capacity of 13,000 tons, she has an overall length of 463 feet and will carry 103,000 bbls. of cargo oil. A single-screw vessel, her 3,500-horsepower steam turbines are designed to give her a top loaded speed of 13 knots. It is expected that Union Oil Co. will begin the construction of a second tanker in the immediate future.

Bureau Report Indicates Better Gasoline Trend

Daily average crude-oil production recorded little change in October, being 3,284,800 bbls., compared with 3,288,700 bbls. in September, according to the Bureau of Mines.

Most of the states declined in daily average output in October, these including California, Oklahoma, and Kansas among the important states. On the other hand, production in both Louisiana and Illinois established new records, the former rising to 271,900 bbls. daily, the latter to 89,300 bbls. daily. There were 328 oil wells completed in Illinois in October, probably most of them in the new Centralia district.

Runs to stills and exports of crude both increased in October, which, combined with the decline in production, tended to increase the rate of stock withdrawals. The reduction in refinable crude stocks in October was 5,329,000 bbls., compared with about 3,500,000 bbls. taken out in September.

The yield of gasoline remained above normal, a small decline (from 45.3 per cent in September to 44.9 per cent in October) being reflected chiefly in a gain in the distillate yield from 13.5 per cent in September to 13.7 per cent in October. Compared with a year ago, the October yields indicate a gain for gasoline of .7 per cent and distillate .8 per cent, both at the expense of the residual yield, which declined 1.8 per cent.

The demand for motor fuel in October was encouraging in that it exceeded the forecasts; however, it failed to meet expectations based on the generally fine weather and business recovery experienced in that month. The domestic demand for motor fuel in October was 46,272,000 bbls., or not quite 2 per cent higher than the same demand in October, 1937. Exports of motor fuel rose to 4,526,000 bbls., compared with 3,830,000 bbls. for October, 1937. Although gasoline stocks increased in October, the addition was very small compared with the performance of a year ago, hence stocks of finished and unfinished gasoline on October 31 of 69,277,000 bbls. were about 1,000,000 bbls. more than was on hand the previous year.

The domestic demand for both kerosene and distillates was slightly higher than in October, 1937, but, despite continued improvement, the demand for residual fuel oil continued to run considerably under last year's demand.

According to the Bureau of Labor Statistics, the price index for petroleum products in October, 1938, was 53.8, compared with 56.4 in September and 61.7 in October, 1937.

The refinery data of this report were compiled from schedules of refineries having an aggregate daily crude-oil capacity of 4,111,000 bbls. These refineries operated at 79 per cent of capacity in October, compared with 79 per cent in September and 85 per cent in October, 1937.

United States Supply and Demand—Crude Oil (Bbls.)

First ten months 1938 and 1937

10 MONTHS—	TOTAL SUPPLY	TOTAL DEMAND	EXCESS DEMAND	EXCESS PCT.	DOMESTIC PRODUCTION	IMPORTS	INDICATED DOMESTIC DEMAND‡	EXPORTS	STOCKS REFINABLE CRUDE OCT. 31
1938	1,033,593,000	1,037,068,000	3,475,000	3.3	1,012,400,000	21,193,000	970,281,000	66,787,000	‖276,807,000
Daily average	3,400,000	3,411,000	.....	..	3,330,000	70,000	3,191,000	220,000	.....
1937	1,090,696,000	1,048,027,000	*42,669,000	*4.1	1,068,029,000	22,667,000	992,554,000	55,473,000	309,165,000
Daily average	3,588,000	3,447,000	.....	..	3,513,000	74,000	3,265,000	182,000	.....
Increase, 1938	†57,103,000	†10,959,000	.....	...	†55,629,000	†1,474,000	†22,273,000	11,314,000	†32,358,000
	†5.5%	†1.1%	.....	..	†5.5%	†6.9%	†2.3%	20.4%	†11.8%

Supply and Demand—Refinery Products—Motor Fuels (Bbls.)

10 MONTHS—	TOTAL SUPPLY	TOTAL DEMAND	EXCESS DEMAND	EXCESS PCT.	DOMESTIC PRODUCTION	IMPORTS	DOMESTIC DEMAND	EXPORTS	STOCKS OCT. 31§
1938	471,757,000	476,094,000	4,337,000	0.9	471,678,000	79,000	435,087,000	41,077,000	70,313,000
Daily average	1,552,000	1,566,000	.....	...	1,551,000	260	1,430,000	135,000	.....
1937	475,872,000	469,724,000	*6,148,000	*1.3	475,813,000	59,000	437,169,000	32,555,000	66,585,000
Daily average	1,598,000	1,545,000	.....	..	1,565,000	190	1,438,000	107,000	.....
Increase, 1938	†4,115,000	6,370,000	.....	...	†4,135,000	20,000	†2,152,000	8,522,000	3,728,000
	†0.9%	1.3%	.....	...	†0.9%	3.4%	†0.5%	26.2%	5.6%
Kerosene									
1938	53,422,000	50,536,000	*2,866,000	*5.6	53,422,000	.....	44,170,000	6,386,000	9,949,000
1937	53,623,000	50,379,000	*3,244,000	*6.4	53,623,000	.....	42,847,000	7,532,000	8,877,000
Increase, 1938	†201,000	177,000	.....	...	†201,000	.....	1,323,000	†1,146,000	1,072,000
	†0.4%	0.3%	.....	...	†0.4%	.....	3.1%	†17.9%	12.1%
Gas Oil and Residual Fuel Oil¶									
1938	387,881,000	364,620,000	*23,261,000	*6.4	370,310,000	17,571,000	324,678,000	39,942,000	136,440,000
1937	397,633,000	398,588,000	955,000	0.2	378,267,000	19,366,000	361,046,000	37,542,000	120,283,000
Increase, 1938	†9,752,000	†33,968,000	.....	...	†7,957,000	†1,795,000	†36,368,000	2,400,000	16,157,000
	†2.6%	†9.3%	.....	...	†2.1%	†10.2%	†11.2%	6.4%	13.4%
Gas Oil and Distillate Fuels									
1938	125,108,000	114,657,000	*10,451,000	*9.1	125,108,000	.....	89,436,000	25,221,000	33,017,000
1937	119,944,000	114,656,000	*5,288,000	*4.6	119,928,000	16,000	89,374,000	25,282,000	28,101,000
Increase, 1938	5,164,000	1,000	.....	...	5,180,000	.....	62,000	†61,000	4,916,000
	4.3%	.....	.....	...	4.3%	.....	0.07%	†0.3%	17.5%
Residual Fuel Oils									
1938	262,773,000	249,963,000	*12,810,000	*5.1	245,202,000	17,571,000	235,242,000	14,721,000	103,423,000
1937	277,689,000	283,932,000	6,243,000	2.3	258,339,000	19,350,000	271,672,000	12,260,000	92,182,000
Increase, 1938	†14,916,000	†33,969,000	.....	...	†13,137,000	†1,779,000	†36,430,000	2,461,000	11,241,000
	†5.6%	†13.6%	.....	...	†5.3%	†10.1%	†15.5%	20.1%	12.2%
Lubricating Oils									
1938	25,907,000	25,706,000	*201,000	*0.4	25,907,000	.....	17,682,000	8,024,000	7,718,000
1937	29,432,000	29,130,000	*302,000	*1.0	29,432,000	.....	19,791,000	9,339,000	6,789,000
Increase, 1938	†3,525,000	†3,424,000	.....	...	†13,137,000	.....	†2,109,000	†1,315,000	929,000
	†13.6%	†13.3%	.....	...	†50.7%	.....	†12.0%	†16.4%	13.7%
Petroleum Wax (Lbs.)									
1938	389,607,000	405,673,000	16,066,000	4.1	361,760,000	27,847,000	241,132,000	164,541,000	128,926,000
1937	459,217,000	445,556,000	*13,661,000	*3.0	429,520,000	29,697,000	253,643,000	191,913,000	129,095,000
Increase, 1938	†69,610,000	†39,883,000	.....	...	†67,760,000	†1,850,000	†12,511,000	†27,372,000	†169,000
	†17.8%	†9.8%	.....	...	†18.7%	†6.7%	†5.2%	†16.6%	†1.3%

*Excess supply. †Decrease. ‡Crude oil only. §Includes finished and unfinished refinery gasoline and natural gasolines. ¶Gas oil and fuel oil equals gas oil and distillate fuels plus residual fuel oils. Note: Total supply equals domestic production plus imports. Total demand equals domestic demand plus exports. Data on demand for refined products are based on refinery shipments. ‖Does not include 17,143,000 bbls. of heavy oils in California. Comparable figures for Oct. 31, 1937, not available.

Crude Oil Run to Stills and Total All Oils (Bbls.)

10 MONTHS—	TOTAL IMPORTS§	TOTAL EXPORTS§	TOTAL CRUDE TO STILLS	PER CENT YIELD GASOLINE‡	NATURAL GASOLINE PRODUCTION	TOTAL SUPPLY ALL OILS*	TOTAL DEMAND ALL OILS*	STOCKS ALL OILS OCT. 31*
1938	44,159,000	163,722,000	969,742,000	44.2	41,728,000	1,099,619,000	1,093,577,000	570,028,000
Daily average	145,000	538,000	3,190,000	...	137,000	3,617,000	3,597,000	.....
1937	48,401,000	144,188,000	985,462,000	43.9	40,550,000	1,159,441,000	1,114,471,000	564,199,000
Daily average	160,000	474,000	3,242,000	...	133,000	3,814,000	3,666,000	.....
Increase, 1938	†4,242,000	19,534,000	†15,720,000	...	1,178,000	†59,822,000	†20,894,000	5,829,000
	†9.6%	13.5%	†1.7%	...	2.9%	†5.4%	†1.9%	1.3%

*Total all oils includes crude and refined products, natural gasoline and benzol. Stocks on Oct. 31, 1938, represented 158 days' supply which compared to 154 days on same date in 1937. †Decrease. ‡Does not include natural gasoline blended at refineries. §Includes crude oil and refinery products. In case of imports includes receipts in bond and for domestic use. All data based on Bureau of Mines reports.

Market Record of Active Oil Stocks

Compiled by Carl H. Pforzheimer & Co., 25 Broad Street, New York City, Member New York Stock Exchange and New York Curb Exchange

New York Stock Exchange

1938 High	1938 Low	Week ending Dec. 17 High	Week ending Dec. 17 Low	Week ending Dec. 17 Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Com. sh. earn. 1937	Com. sh. earn. 1936	Dividends paid in 1937	1937 High	1937 Low	1936 High	1936 Low
78	55	69½	68	69¼	Amerada Corp.	788,675	N.P.	50cQ	10-31-38	$3.04	$2.52	$.200	114⅞	51½	125½	75
27⅜	17¾	23¾	21⅞	23⅝	Atlantic Refining	2,663,999	$25	25cQ	12-15-38	3.51	2.59	1.00	37	18	35⅛	26⅝
23¾	12⅛	20⅝	18⅝	20¼	Barber Asphalt Co.	390,223	$10	75c	12-16-37	1.91	1.14	1.00	43⅜	10⅛	38½	21
21⅜	10⅛	18⅝	17½	17¾	Barnsdall Oil Co.	2,250,344	$5	25cQ	11-1-38	0.85	1.01	1.00	35¼	10	28¼	14⅛
10¾	7	8⅞	8¼	8⅝	Consolidated Oil Corp.	13,915,167	N.P.	20cQ	2-15-39	1.48	1.18	.90	17⅞	7	17¼	11½
35¾	21¼	31⅛	28¼	30¼	Continental Oil of Delaware	4,682,583	$5	25cQ	12-20-38	2.98	2.05	1.50	49	24	44⅞	28⅛
9¾	5	7⅞	7¼	7½	Houston Oil (new)	1,098,618	$25	....	10-17-30	0.94	—0.03	....	17⅝	4¾	13⅞	6⅜
22⅝	12¼	16⅜	15⅛	16	Mid-Continent Petroleum	1,857,912	$10	35c	12-1-38	2.86	2.57	1.50	35⅜	14	30⅜	17¼
17¾	10⅝	13¾	13	13	Mission Corporation	1,382,945	$10	$1	6-29-38	1.31	0.48	1.25	34	15	29⅞	16⅜
23	12½	14¾	13⅝	14	National Supply	1,155,170	$10	$2 pf.‡	12-22-37	4.90	2.02	(‡)	41⅜	17⅝	75½	19⅞
14⅞	8⅞	9⅞	9	9⅝	Ohio Oil Co.	6,563,377	N.P.	20c	12-15-38	1.30	0.70	1.00	22⅞	8	18	12⅛
15⅞	10¼	11¼	10⅜	11	Pacific Western Oil	1,000,000	N.P.	50c	12-20-38	1.39	1.58	.75	29⅜	11⅜	23½	11⅜
9¼	6¼	6¾	6¾	6¾	Pan American Pet. & Trans.	4,702,945	$5	$1*	12-21-37	1.18	0.52	1.00	17⅛	7	20⅝	12¼
44⅜	27¼	43¼	40⅝	41⅞	Phillips Petroleum	4,449,052	N.P.	50cQ	12-1-38	5.42	4.02	2.75	64	30⅛	52⅜	33⅛
25⅜	15	22¼	20¾	21⅞	Plymouth Oil Co.	1,029,800	$5	35cQ	12-12-38	2.85	1.65	1.65	29⅞	13	27¾	11⅞
10⅞	10⅜	10⅞	10⅛	10¼	Pure Oil Co.	3,285,120	N.P.	25c	12-1-37	2.15	1.63	.25	24⅜	8¾	27⅞	16
9⅞	5	9⅛	8¼	8¾	Richfield Oil Corp.	3,896,638	N.P.	50c	12-21-38	0.35	....	.25	6½	4⅛	..	..
27½	15½	21½	19¾	20¾	Seaboard Oil of Delaware	1,244,383	N.P.	25cQ	12-15-38	1.97	2.00	1.00	54⅛	16	44	30½
18⅜	10	14½	13¼	14¼	Shell Union Oil	13,070,625	N.P.	35c	7-15-38	1.44	1.57	1.00	34¾	14⅞	28¼	14¾
34¾	18½	28	25⅝	27⅝	Skelly Oil	1,003,949	$15	50c	12-15-38	6.07	4.42	1.50	60⅝	26½	47⅜	19½
16⅜	10¾	13¾	13	13⅛	Socony-Vacuum	31,151,071	$15	25c	9-15-38	1.82	1.38	.80	23¼	13	17½	12⅛
34⅞	25⅛	28⅝	26	28⅛	Standard Oil of California	13,014,754	N.P.	35cQ†	12-15-38	3.17	1.79	2.00	50	27⅛	47⅝	35
35½	24¾	28⅝	26½	28½	Standard Oil (Indiana)	15,267,030	$25	25cQ	12-15-38	3.66	3.09	2.30	50	26½	48½	32¾
50⅛	32½	..	..	..	Standard Oil of Kansas	112,837	$10	$2	12-8-38	6.93	1.91	5.00	43	30⅝	31	25
58⅜	39¾	51⅞	49⅞	51½	Standard Oil of New Jersey	26,224,767	$25	50c§	12-15-38	5.64	3.73	2.50	76	42	70⅜	51⅛
62¾	45	62¾	60	62	Sun Oil	2,316,484	N.P.	25cQ	12-15-38	3.86	3.25	$1 & 8% stk.	77½	44½	91	70
4¼	1¾	3¼	2⅞	3	Superior Oil Corp.	1,388,079	$1			0.32	0.14	....	7⅜	1½	6⅜	3
49⅝	32⅝	45	42¾	44¼	Texas Corp.	10,875,006	$25	50cQ	1-5-39	5.02	4.10	2.25	65⅛	34¾	55¼	28⅞
5¾	2⅝	5⅛	4⅝	5⅛	Texas Gulf Producing Co.	888,138	N.P.	15c	12-15-38	0.68	0.93	.10	9⅝	2	8⅞	4⅝
12½	7	10	9½	9¾	Texas Pacific Coal & Oil	888,140	$10	10c	12-1-38	1.11	0.72	.40	16⅝	5⅜	15¼	7½
15¾	10⅛	12⅞	12½	12⅝	Tide Water Associated	6,369,175	$10	25cQ	12-1-38	2.08	1.03	1.20	21⅝	13⅛	21¾	14¾
22½	17⅛	18¾	18⅛	18½	Union Oil of California	4,666,270	$25	30cQ	11-10-38	2.58	1.40	1.40	28¼	17½	28½	20⅝
23½	20	20¾	20⅛	20¼	Union Tank Car Co.	1,200,000	N.P.	30cQ	12-1-38	1.70	1.76	1.80	31½	22	31⅝	22⅝
3½	1⅝	2¾	2¾	2¾	Wilcox Oil & Gas	506,522	$5	...	5-10-28	0.24	—0.06	....	6¼	1¾	5¼	2⅜

*Payable in 3½ per cent notes. †Includes extras. ‡One-tenth share $2 preferred stock. §Also 1⅛ per cent stock dividend.

New York Curb Exchange

1938 High	1938 Low	Week ending Dec. 17 High	Week ending Dec. 17 Low	Week ending Dec. 17 Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Com. sh. earn. 1937	Com. sh. earn. 1936	Dividends paid in 1937	1937 High	1937 Low	1936 High	1936 Low
11¾	5	9⅜	8⅜	9	American Republic Corp.	1,308,049	$10	10c	7-11-38	$0.27	$0.28	$0.40	10	6⅝	..	..
10¼	4⅞	6¾	6⅛	6⅜	Bridgeport Machine Co.	260,000	N.P.	$1.25	12-30-37	1.90	1.26	2.00§	21⅝	7	21	13¼
39	22½	25	22½	24½	Buckeye Pipe Line Co.	200,000	$50	50c	12-15-38	4.02	4.40	3.75	51½	36	50	39¾
120	97	120	117	120	Chesebrough Mfg. Co.	120,000	$25	$2Q†	12-19-38	6.73	7.46	7.00	12	95½	124¾	105
11	5⅛	6⅜	6	6⅛	Cities Service (new)	3,714,317	$10	....	6-1-32	1.02	0.13	....	5⅜	1½	7⅜	3
2⅜	⅞	1⅛	1	1	Cosden Petroleum	462,551	$1	....	.....	0.19	....	....	5½	1½	4½	1½
27½	17½	23⅝	22⅝	22⅝	Creole Petroleum	6,975,383	$5	50cSA†	12-15-38	1.61	1.23	1.00	38¾	20¼	39	19⅞
10¼	5½	7⅜	7⅛	7¼	Darby Petroleum	351,390	$5	25cSA	1-15-39	1.36	1.26	.50	18⅝	6½	18⅛	9
3½	1½	2⅛	1⅞	2	Derby Oil & Refining	263,162	N.P.	....	.....	1.34	0.66	....	8⅜	2¼	6⅜	1⅞
31	17⅛	17½	17⅛	17½	Eureka Pipe Line	50,000	$50	50c	11-1-38	—0.12	—0.62	4.00	47½	24½	47½	38½
46⅞	33	40⅛	37½	39¼	Gulf Oil Corp.	9,076,202	$25	25cQ	12-15-38	3.51	2.90	1.00	63½	33	59	36
72⅝	56	69¼	65⅞	68¼	Humble Oil & Refining	8,987,840	N.P.	62½c	12-27-38	5.22	3.80	2.00	87	54⅞	80	57
19½	14⅛	17	16⅝	17	Imperial Oil of Canada	26,965,078	N.P.	62½cSA†‡	12-1-38	0.98	0.95	1.25	24¼	14½	24½	19¾
9⅜	6	6¼	6	6⅛	Indiana Pipe Line	300,000	$10	20c	11-15-38	1.03	1.00	.80	15	5⅞	9¾	5½
31¼	21	27¼	25½	26⅝	International Petroleum	14,324,088	N.P.	$1.25†‡	12-1-38	....	1.81	2.50	39½	23½	39⅝	32⅝
5	2⅛	3	2¾	2¾	Kirby Petroleum Co.	500,000	$1	10c	4-15-38	0.17	0.20	....	8⅜	2⅜	5¾	2⅝
25⅛	15⅝	20¼	19⅜	19½	Lion Oil Refining	434,820	N.P.	25cQ	10-10-38	2.17	1.43	1.50	34	12½	17⅝	7⅝
10⅜	6⅝	9⅛	8⅞	9⅛	Lone Star Gas	5,553,747	N.P.	20c	12-22-38	1.14	1.02	.80	14¼	5¼	14¼	9⅝
9⅜	6½	7⅜	6⅞	7⅛	Louisiana Land & Exp.	2,977,449	N.P.	10cQ	12-15-38	0.58	0.64	.50	15¼	6⅝	15⅝	9⅞
9¾	6⅜	8⅞	8	8¾	Midwest Oil Co.	998,444	$10	50c	12-15-38	1.14	0.95	1.00	14⅜	6¼	..	..
5¾	4½	5⅛	5	5	Mountain Producers	1,593,584	$10	30cSA	12-15-38	0.76	0.62	.60	7⅞	4½	8⅝	5
14⅝	11½	13⅜	12⅞	13	National Fuel Gas	3,810,183	N.P.	25cQ	1-16-39	0.96	1.19	1.00	19½	12	23	17⅝
9¼	6½	7¼	6½	7	National Transit	509,000	$12.50	40c	12-15-38	1.19	0.79	1.00	12½	7¼	15⅜	9¼
2⅝	1½	1½	1½	1½	New Mexico and Arizona	1,000,000	$1	1c	12-1-38	0.02	0.02	..	5	1⅛	6⅝	1⅝
4½	4	..	..	..	New York Transit	100,000	$5	15c	10-15-38	0.49	0.34	1.00	5⅜	3⅞	6¼	4¼
6	4	..	..	..	Northern Pipe Line	120,000	$10	15c	12-1-38	0.78	0.66	1.00	12⅜	5⅜	9⅜	4⅞
7⅜	3½	7	6¼	6⅜	Pantepec Oil	2,441,142	$1	....	.....	....	0.05	....	9⅝	2⅜	10⅛	3¼
4½	1⅝	2¾	2⅛	2⅛	Root Petroleum Co.	336,045	$1	25c	2-1-37	—0.17	0.45	.25	12⅜	2	19¼	4½
4	2⅛	2½	2½	2½	Ryan Consolidated	296,931	N.P.	....	.....	0.46	....	....	6½	2¼	4¾	1⅞
5⅜	3¼	..	..	..	Southern Pipe Line	100,000	$10	15cSA	9-1-38	0.85	0.41	.45	7¼	3⅞	7⅞	3¼
39	28¾	30¼	29½	30¼	South Penn Oil	1,000,000	$25	37½cQ	9-24-38	4.64	3.59	3.65	56	35	44	32½
22¼	17	17	17	17	Southwest Penna. Pipe Lines	35,000	$50	50cQ	10-1-38	0.95	0.97	2.00	42	20	60	44
18¾	15	17¾	17¼	17⅝	Standard Oil of Kentucky	2,604,790	$10	50cQ†	12-15-38	1.60	1.46	1.50	21⅛	14¾	23⅜	17⅛
8¾	5½	6¾	6	6⅜	Standard Oil of Nebraska	166,403	$25	25c	3-29-37	—0.58	0.42	.25	13¾	8	14⅝	11
22¾	16¼	19⅜	18½	19½	Standard Oil of Ohio	753,740	$25	25c	12-15-38	3.67	4.77	1.50	45	16	40	21¾
3¼	2⅛	2⅜	2⅛	2¼	Sunray Oil	2,006,176	$1	10c	12-24-37	0.42	0.26	.25	4⅞	2	5	2⅜
5¼	3½	3⅝	3⅜	3⅜	Texon Oil & Land	936,024	$2	15cQ	9-30-38	0.51	0.36	.45	7⅝	2	9⅜	5⅜
7⅝	4¼	4⅞	4½	4⅞	Transwestern Oil Co.	750,000	$10	....	.....	0.48	0.06	....	13⅞	4⅝	..	..
5¼	2⅝	2⅞	2⅝	2⅞	United Gas Corp.	7,818,959	$1	....	.....	0.25	0.20	....	13⅞	3	10⅝	4

†Includes extras. ‡Payable in Canadian funds. §Of which $1 was in preferred stock.

Personal Paragraphs

G. A. JOSLIN, of Los Angeles, has been elected chairman of the California Chapter of the American Institute of Mining Engineers for the coming year and HARRY P. STOLZ, vice chairman. Other officers are C. O. SANFORD, secretary-treasurer, and N. W. WICKERSHAM, assistant secretary. The executive committee consists of WALTER ABEL, HENRY MULRYAN, and W. S. EGGLESTON, with ERNEST K. PARKS, retiring chairman, automatically a member of the committee.

M. R. SPRINGER, Little Rock, Ark., division manager of the Lion Oil Refining Co., is the new chairman of the Arkansas Petroleum Industries Committee, succeeding M. W. EDINGTON, state manager of the Gulf Refining Co.

DOLPH PERKINS has been named manager of Producers, Inc., organized to take over the Sinclair Refining Co. gathering system in Montgomery County, Kansas. C. I. Layton is president of the new company; W. N. WHITE, vice president; E. W. HAYES, secretary-treasurer.

R. H. FOSTER, chief counsel for Landreth Production Corp., Fort Worth, Tex., has been elected executive vice president, and on January 1 he will withdraw from the general practice of law. The company has moved from the Petroleum Building to the Sinclair Building.

RALPH D. RISSER, Kilgore, Tex., of the Shell Petroleum Corp., was named chairman of the East Texas chapter of the A.P.I. at a meeting in Kilgore last week. Other officers elected were R. M. BASS, J. J. JENKINS and J. P. STRAIGHT, vice chairmen; W. S. MORRIS, secretary-treasurer; D. M. KERR, assistant secretary.

E. F. CASSIDY, formerly in charge of Montana operations of the Transit & Storage Co., and ROBERT McADAM, widely known pipe-line construction contractor, have formed the Casmac Engineering Co., to conduct pipe-line construction and engineering in the Rocky Mountain region. Mr. McAdam, in the pipeline business 20 years, was formerly with the Continental Oil Co., Texas Co., and Illinois Pipe Line Co. Mr. Cassidy has been in similar work 19 years. He too served Continental formerly.

PROF. IDA H. OGILVIE, of Barnard College, New York, says in a report to the Geological Society of America: "The majority of women working in geology today are connected in some way with the oil industry. In most cases they are employed in the offices of petroleum companies and take care of reports which come in accompanied by samples cored out of rock which contains prospective oil deposits. Those women might earn as high as $150 a month and expenses to start. Many girls work for a year or two and then get married. They seldom work after they are married."

LORD BEARSTED has resigned as chairman and director of Venezuelan Oil Concessions, Ltd., effective December 31, owing to the increasing demands on his time. SIR ANDREW AGNEW has been appointed as his successor.

ROBERT J. KUHN, New Orleans, La., consulting engineer, is spending a vacation, accompanied by Mrs. Kuhn, in Havana and the surrounding country. Before going to Cuba he attended the southern district convention of the American Institute of Electrical Engineers, Miami-Biltmore Hotel, Coral Gables, Fla., where he delivered a paper on electrolysis and corrosion. It was the first southern district meeting in 8 years.

LUDWIG SCHMIDT, senior petroleum engineer at the Bartlesville, Okla., experiment station of the U. S. Bureau of Mines, and C. J. WILHELM, associate petroleum engineer, were in Austin, Tex., last week, conferring with officials of the State Health Department concerning brine disposal in Texas oil fields. These two engineers have made studies of the subject. During the coming year the health department plans cooperative research with the bureau, following similar research work in the field of stream pollution.

Do You Remember?

From The Oil and Gas Journal Files

25 YEARS AGO

Without knowing whether or not there is oil there, oil operators have rigs active in the Alberta, Canada, district.

Edward A. Latimer has severed his connection with the Prairie Oil & Gas Co. to join the Magnolia Petroleum as assistant to the president of the pipe line department. Prairie pipe line men gave a farewell banquet in the Elks Club in Tulsa in Mr. Latimer's honor, and presented him with a suit case and a fine gold watch as an evidence of their esteem.

The Tulsa Oil Co., Ltd., is a British corporation, believe it or not. It netted 10,571 pounds, 17 shillings, in its fiscal year just passed.

20 YEARS AGO

John V. McMahon has resigned as third vice president of the Gypsy Oil Co. to go with the Sinclair Gulf Oil Co. in an executive capacity. He will have his headquarters in Fort Worth, Tex.

The Uncle Sam Oil Co. has sold its filling stations to the Crew-Levick Co., a Doherty subsidiary.

The Carter Oil Co. has leased about 400,000 acres in McKinley and Valencia counties in New Mexico and will drill a test. Sinclair Oil & Gas Co. will drill on a block in Union County.

10 YEARS AGO

Crude and refined products in storage aboveground in the United States at the end of October totaled over 800,000,000 bbls.

Memphis, Tenn., is enjoying the luxury of natural gas for fuel. It comes through a 212-mile, 18-inch line from Louisiana.

R. Ogarrio, formerly assistant to Daniel J. Moran, vice president of the Texas Co., has succeeded Mr. Moran as vice president, and will have charge of the company's producing interests, as vice president of the Texas Corp. Mr. Moran now heads the Continental Oil Co.

The rapidly growing Santa Fe Springs field in California has passed the 100,000-bbl. mark and is expected to reach 150,000 bbls. a day within 30 days.

SAM LANE, assistant to ATTORNEY GENERAL McCRAW, of Texas, has been named the new chief administrative officer of the oil and gas division of the Railroad Commission of Texas.

C. B. HUMPHREY, for years on the staff of The Oil and Gas Journal, has entered the service of the Independent Petroleum Association of America. He will represent the association's membership department in Texas and Louisiana.

JOHN E. TAYLOR, of Marshall, Texas, new chief of the oil and gas division of the Railroad Commission of Texas, was district attorney of Gregg County during the East Texas boom. He still maintains a law office in Longview, is county attorney of Harrison County, and has holdings in the East Texas field.

R. E. RETTGER, Sun Oil Co., of Dallas, has been named president of the Dallas Petroleum Geologists. Mr. Rettger, outgoing vice president, succeeds DILWORTH GAGER in the office. Other new officers in the geological association are W. W. CLAWSON, Magnolia Petroleum Co., vice president; R. J. FORSYTHE, Seaboard Oil Co., secretary-treasurer, and EUGENE McDERMOTT, Geophysical Service, Inc., executive committee member.

SOL A. HERTZOG, New York attorney, was the speaker at a recent dinner of the Broome County Gasoline Retailers' Association in Birmingham, N. Y. Mr. Hertzog discussed the attack of nerves from which the gasoline market is suffering and attacked the suggestion that service station operators make up for inadequate margins by selling tires and automobile accessories. He insisted that gasoline should yield its own profit.

Personal Paragraphs

SHELDON CLARK, of Chicago, vice president of Sinclair Refining Co., has been appointed national commodore of the Sea Scouts, an organization in which about 30,000 boys are enrolled.

WILLIAM N. BISSELL, personnel manager of the eastern division of the Niagara Hudson Power Corp., Albany, N. Y., has been appointed chairman of the committee on personnel practices of the American Gas Association.

JOHN M. MARTIN, formerly in the general offices of the Socony-Vacuum Oil Co., New York, has been made manager of a division office established in Buffalo, N. Y. H. STEWART MERRIMAN has been appointed sales manager of the local district, succeeding CLAYTON G. MAXWELL, who becomes district manager in Syracuse.

DAN CAMERON, scout for the Carter Oil Co., has been transferred from Great Bend, Kans., to the Forest City Basin area of northeastern Kansas, southwestern Iowa, and northwestern Missouri. Other scouts transferred to that area from Wichita, Kans., are DICK LANAHAN, seismograph scout for Ohio Oil Co.; JACK LANDER, Pure Oil Co., and JOE BODINE, Amerada Petroleum Corp.

A. W. ROGERS, chairman of Trinidad Leaseholds, Ltd., announced at the company's annual meeting in London that he will retire from the board at the end of the year. He said the company had been a great part of his life for 25 years. He explained that the new "Trinidad cocoa levy" was a tax imposed by the Trinidad government on all companies trading in the island, with the object of assisting the cocoa industry.

Might Try His Ranch

Friends of Earle W. Gard, new director of research and development for the Union Oil Co. of California, say if you can't find him any time, try his ranch at Del Mar, Calif. He likes to steal off to its leafy quiet whenever opportunity appears.

EARLE W. GARD

Mr. Gard, before his recent advancement, had been development engineer for Union 8 years. He has been particularly active in the development of highly modernized processes that have revolutionized refinery operations and in determining the specifications for equipment and materials required by the changed technique.

Born in New Burlington, Ohio, Mr. Gard received his early schooling in Xenia and Dayton in that state. He entered Dayton University, but finished his collegiate course in the University of Southern California, graduating from that institution. In the World War he served as an engineering officer in the navy. Upon his discharge in 1919 he joined Union's testing and developing staff, remaining in that work till 1923, when he resigned to become assistant manager of the Pan American Oil Co.'s refinery at Watson, Calif. In 1928 he returned to Union as assistant to R. E. Haylett, then manager of research and development, and he was appointed development engineer in 1930. He held this post till his recent promotion.

Mr. Gard resides, with his wife and two children, at Palos Verdes Estates, near Los Angeles. He is an outdoor man, loves to hunt, fish and to potter around his ranch.

W. T. HOLLIDAY, of Cleveland, president of Standard Oil Co. of Ohio, was one of 10 vice presidents of the National Association of Manufacturers elected at its recent meeting in New York.

W. E. GILBERT, Shell Oil Co., Los Angeles, Calif., has been appointed 1939 chairman of the American Petroleum Institute central committee on drilling and production practice. C. E. REISTLE, JR., Humble Oil & Refining Co., Houston, Tex., has been named vice chairman for the year.

B. B. BOATRIGHT, consulting engineer of Houston, Tex., testified that the Turner Valley field in Alberta, Canada, has reserves of 171,000,000 to 256,000,000 bbls. of crude oil, naphtha and natural gasoline. He appeared before the McGillivray royal commission inquiring into the oil industry at Calgary last week.

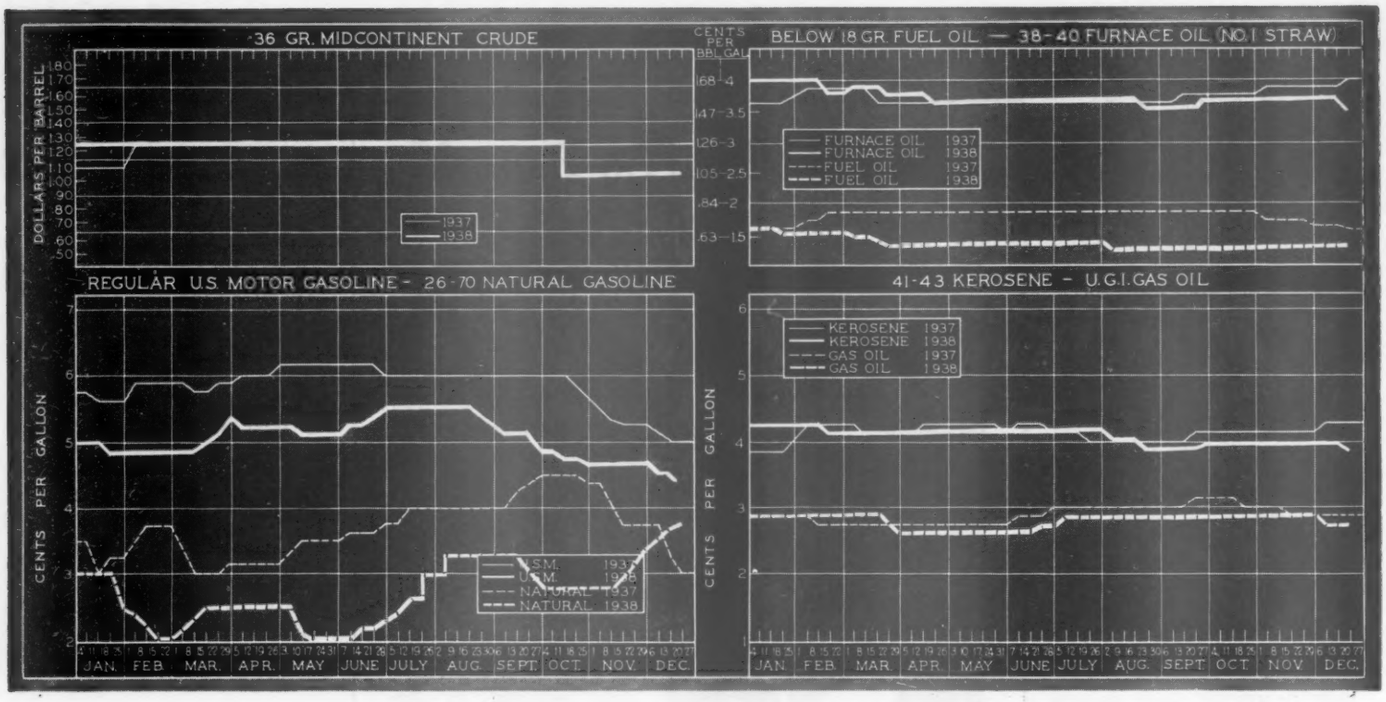
JOHN R. BOETTCHER, JR., president of the Metropolitan Philadelphia Petroleum Retailers' Association, has started a movement looking to a series of informal conferences of local associations in Pennsylvania. He points out that while Pennsylvania is among the largest consumers of gasoline, its dealers are not well organized and its markets seldom are stabilized.

PROF. ARTHUR DILTS, of the agricultural engineering department of Oklahoma A. and M. College, Stillwater, spoke before the Tulsa group, Society of Automotive Engineers, last Friday evening in the Hotel Tulsa. His subject, "Agricultural Automotive Equipment," covered such points as evolution of tractor tires, changes in size and horsepower of farm equipment, modern high-octane fuels, butane, Diesel fuels, and lubrication.

SHIFTS: WILLIAM FIFE, Bishop Oil Co., from Bakersfield, Calif., to Reno, Nev.; JOSEPH BRECKLEIN, secretary, Refinoil Manufacturing Co., from Los Angeles, Calif., to Kansas City, Mo.; LLOYD WILLIAMSON, vice president, California Star Oil Co., from Fellows, Calif., to Los Angeles, Calif.; J. T. HAUN, scout, Harris & Haun, from McPherson, Kans., to Blackwell, Okla.; R. W. SWAIN, assistant refinery superintendent, Texas Co., from Lawrenceville, Pa., to Henry H. Cross Refinery, Joliet, Ill.; W. F. DENBOW, superintendent, Ohio Mexican Oil Corp., S. A., from McAllen, Tex., to Athens, Tex.; CARL A. STASSEL, construction foreman, Texas-New Mexico Pipe Line Co., from Midland, Tex., to Eunice, N. M.; RALPH E. THORNBURG, driller, from Odessa, Tex., to St. Peter, Ill.; E. F. McMULLIN, geophysicist, Geophysical Service, Inc., from Alexandria, La., to Donaldsonville, La.; F. C. BARCLAY, E. C. Johnston Co., from Centralia, Ill., to Mount Vernon, Ill.; B. S. GRAMLEY, purchasing agent, Long Island Lighting Co., from New York, N. Y., to Mineola, N. Y.; F. C. HENDERSON, president, the Henderson Co., from New York to Palm Beach, Fla.; J. H. VAN ZANT, vice president, Grisso Royalty Corp., from Enid, Okla., to Oklahoma City, Okla.; EDWARD M. TUCKER, engineer, Phillips Petroleum Co., from Great Bend, Kans., to Wichita, Kans.; RALPH I. HORNBROOK, Cities Service Oil Co., from Stockton, Kans., to Hays, Kans.; FRANK W. BRUNER, production foreman, Carter Oil Co., from Seminole, Okla., to St. Elmo, Ill.; CHARLES A. DILLARD, engineer, Carter Oil Co., from Henderson, Ky., to Owensboro, Ky.; M. A. DRESSER, Carter Oil Co., from Tulsa to Saginaw, Mich.; R. W. KIRKPATRICK, Carter Oil Co., Wilson, Okla., to Seminole; S. F. MAUNCEY, JR., engineer, Carter Oil Co., from Seminole to Tulsa.

R. E. WALCHER, assistant traffic manager for the Globe Oil & Refining Co., Wichita, Kans., has been chosen president of the Traffic Club.

H. H. HENSLEY, general manager of the Valley Pipe Line Co., received double honors last week when he was elected president of the Kiwanis Club, of McAllen, Tex., his home town, and was made vice president of the McAllen Chamber of Commerce.



Representative Mid-Continent Quotations on Crude Oil and Refined Products, Basis Oklahoma (Group 3)

Gasoline and Light Fuels Drift Lower in Group 3 Area, but Naturals Rise

By T. F. SMILEY

Motor fuel, kerosene, heating oils, tractor fuels —all were caught by adverse currents in the Group 3 territory the past week and swept to lower levels. Natural gasoline defied opposing tides and sturdily climbed higher. Wax was exceptionally strong, and heavy industrial oil refused to be elbowed from the improved position it had gained in recent weeks.

There was lack of unanimity as to what caused the recession in the better grades of gasoline, but it seemed clear that the marked drop in low-octane material resulted from the introduction by the Standard Oil Co. of Indiana of its new 67-octane third-grade brand, sold at the refinery and at the pump at the prices which formerly ruled for the low-octane product which it displaced.

Adjusting to New Conditions

Evidences that other companies were adjusting themselves to the new conditions created by Indiana's action were visible this week. Danciger Oil & Refineries, Inc., announced it was preparing to sell on a Group 3 basis from its Pampa, Texas, refinery a 67-octane fuel at a price below that now ruling for gasoline of that grade, but not directly meeting the competition presented by Indiana's new fuel. All sales will be in the spot market. One day before Indiana put its new green-colored gasoline in the retail market in Minneapolis, Minn., Pure Oil Co. jumped the gun and introduced its own 67-octane third-grade material.

Most refiners and marketers operating in the 13 states which comprise Indiana's sales territory were offering a higher-octane third-grade fuel this week or were preparing to do it. One jobber in Wisconsin who had ordered 12 cars of third-grade gasoline from an Oklahoma refiner sent additional instructions late last week, directing that the material be 67-octane and that it be shipped immediately. The sales manager replied that he would have to charge 4⅛ cents a gallon instead of the figure previously quoted for the old third grade.

"Go ahead," was the reply. "I've got to have it."

It is conceded generally that the high-octane third-grade fuel, now offered in Standard of Indiana territory only, will spread to other regions.

Regardless of misgivings, originating in the discouraging market which has prevailed for months rather than in any opposition to raising antiknock ratings, there was wide belief that the next few weeks will see the 67-octane third-grade gasoline, or some equivalent, established as a permanent member of the motor fuel family.

All grades of gasoline lost an eighth. Low-octane material lost more than that, for all who had any were in a hurry to move it out. Offerings under 3 cents were reported in a few cases of distress inventories.

Natural gasoline annexed another eighth in both Oklahoma and Texas. Scarcity of supplies continued, and one manufacturer was reported to have more business booked for January than for December.

Heating Oils in Trouble

The push that toppled heating oils, kerosene, and tractors was administered by the weather man. The same mild temperatures that have kept gasoline consumption at unexpectedly high levels backed up light burning oils until the inevitable concessions to move burdensome inventories began to be offered. A bit of snapping cold weather probably would draw all the prices in this group back to their former place, but refiners are indulging no illusions about the situation, which they interpret as meaning there will be no runaway market in the furnace oils this winter.

The lubricant group, already feeble, became more wobbly with the latest cut in Pennsylvania quotations.

Refined Oil Market Barometer

Cold weather has steadied heating oils on the North Atlantic Coast, but lack of it has backed up that material in the interior regions. Refiners generally are laying plans to adjust their operations to the definite movement now under way toward higher-octane gasolines. Natural gasoline buoyant, with much business booked for January. Heavy fuels improving.

MID-CONTINENT. Gasoline, kerosene and heating oils down. Naturals and wax vigorous.

EAST COAST. Gasoline firmer. Furnace oils improving. Kerosene steadier. Wax strong.

GULF COAST. Burner oils slightly weaker. General market sluggish.

PENNSYLVANIA. Gasoline fairly steady. Heating oils firmer. Neutrals off.

CALIFORNIA. Market quiet. Commitments being made on offshore business for 1939.

CHICAGO. Heating oils and gasoline unsettled. Heavy fuel holding its gains.

Gasoline Recovers Lost Ground on East Coast; Fuel Oils Up

By H. STANLEY NORMAN

NEW YORK, Dec. 20.—Reasonably mild winter weather, a strong statistical position and higher tanker rates for coastwise cargo transportation combined last week to bring tankcar motor fuel prices back from a recent slump in principal Atlantic terminals. Tankcar motor fuel of 65-octane was not available in New York for less than 6 cents per gallon and most suppliers were asking 6¼ cents. During the two preceding weeks this grade of motor fuel was reported obtainable in certain quarters for a minimum of 5¾ cents per gallon with a few barge deliveries made at 5½ cents.

There is an increasing tendency noted among retail service station operators to press for greater margins. In a recent meeting of dealers at Buffalo it was declared that present price wars in many scattered points in the northeastern territory are ruinous to the retail outlet operators. In one instance it was disclosed that cut prices returned a maximum of $14 per week to the service station operator handling average gallonage with returns diminishing in proportion to the outlet's margin below par gallonage.

In this connection, Harold B. Ehrlich, chairman of the New York legislative committee, who spoke before the dealers, announced intentions of introducing at the next session a compulsory licensing law covering gasoline service stations. It is the New York legislator's plan to issue licenses to all present stations, but subsequent business permits would be granted only on the showing of necessity.

A movement was launched in Buffalo to impose minimum retail resale price schedules on the 1,000 to 1,500 outlets in the district to permit a margin of nearly 4 cents per gallon. The plan would follow Feld-Crawford Act contracts which have been negotiated between wholesalers or refiners and retailers in parts of New Jersey, most of metropolitan New York, Rochester and Niagara Falls.

Assemblyman Ehrlich indicated that the oil industry in New York state is not through with its dealings with the legislature.

"Our committee will continue to work for the benefit of the retailer," he said. "I urge you to form a strong organization and associate yourselves with other such bodies in the state so that you may weld yourselves into a unified mass to obtain your objectives.

"There is need for a statewide license law for filling stations. There should be a certificate of public necessity before a new station is permitted to open. That is the only way for you to maintain your present gallonage.

"Our committee will offer such a bill at the coming session of the legislature but we propose that it will grant a license to all that are now operating," he concluded.

While reasonably mild winter weather and the holiday season probably have contributed their full share to the current movement of motor fuel in this district other factors have played a part in keeping the price structure on a stable basis. Of considerable importance in keeping the structure at summer end levels is the increasing tanker charter rate. Clean boats for January loading on the Gulf Coast are being held at 30 cents and some owners are asking 32 cents. Refiners in the Gulf Coast primary market have presented a firm front during the past few weeks and there is indication that export buyers are prospective factors in the near future. Furthermore, the Texas Railroad Commission's action last week in extending the five-day producing week for the first three months of 1939 gave a clearer picture of the immediate future and its wholesome effect was discernible almost over night.

Only one small change in the preceding week's motor fuel price structure in this territory was reported last week. A reduction of a tenth of a cent per gallon in the tank-wagon dealer price at Hartford, Conn., was made effective December 9 by Socony-Vacuum Oil Co., Inc.

Adjustments were made in five Ohio counties by Standard Oil Co. of Ohio, on December 14. Regular and third-grade gasoline in Butler and Warren counties was raised a half cent to the tank-wagon trade and dealer prices were lowered a half cent. In Champaign, Drake and Miami counties, tank-wagon and dealer prices were lowered a half cent.

The northeastern fuel oil market is just now reaching its full winter stride. Most prices, while below those prevailing at the same time a year ago, are now on relatively uniform ground and market concessions are reported less frequently than at any time since the burning season opened. The tankcar price of 4¼ cents appears to be well established at all eastern seacoast terminals. Occasional sales at 4 cents are reported in the New York and Boston districts, but this is largely confined to barge deliveries.

A material improvement in the domestic fuel oil price structure around New Haven, Conn., was reported last week. The kerosene tankcar price was reported at 5 to 5½ cents, up a half to a cent per gallon from earlier December quotations. Domestic fuel oil No. 2 and No. 3 is now quoted at 4¼ to 4½ cents to the tankcar trade, as against 4 cents previously and tank-wagon prices range from 6 to 6½ cents.

Although actual trading has been confined to small part cargoes for the past two or three weeks, exporters are reported showing greater interest in Gulf Coast gasoline and Diesel oil supplies. Counter offers on quotations in response to inquiries are much nearer the refiners' price ideas than at any time in the recent past. Counter offers in most negotiations reported last week were an eighth to a sixteenth of a cent below original quotations compared to a previous margin in the range of a quarter to three-eighths of a cent.

French buyers were reported actively seeking several cargoes of 64-66-gravity motor fuel for early 1939 loading. Inquiries were also received in the Gulf Coast market last week for four or five part cargoes indicating they were intended for private distributors in Europe.

Gulf Coast suppliers are currently quoting a minimum of 67½ cents per barrel for cargoes of residual fuel oil meeting Bunker C specifications. In New York harbor and other Atlantic Coast terminals the Bunker C fuel oil price is unchanged from preceding levels. Practically all suppliers at this point are asking 95 cents per barrel.

Motor fuel for coastwise movement is held on the Gulf Coast at 4⅜ to 5⅛ cents per gallon, depending on octane specifications and about the same range is quoted on export gasoline. Kerosene is held at 3⅞ to 4⅛ cents per gallon on the Gulf Coast, but most New York and northeastern suppliers are asking 4¾ to 5¼ cents per gallon in tankcar trade.

The western Pennsylvania lu-

(Continued on Page 104)

A. P. I. Weekly Refinery Statistics

Week Ending December 17, 1938

	Capacity reporting (per cent)	Daily crude runs (bbls.)	Total gasoline stocks	Gas oil and fuel oil stocks
East Coast	100.0	472,000	17,519,000	14,144,000
Appalachian	85.9	111,000	2,780,000	759,000
Indiana, Illinois and Kentucky	89.5	411,000	10,601,000	8,059,000
Oklahoma, Kansas and Missouri	81.6	263,000	6,187,000	4,497,000
Inland Texas	50.3	116,000	1,684,000	1,989,000
Texas Gulf	88.9	809,000	9,542,000	12,896,000
Louisiana Gulf	97.3	127,000	2,069,000	2,406,000
North Louisiana and Arkansas	55.0	43,000	435,000	852,000
Rocky Mountains	54.2	43,000	1,193,000	692,000
California	90.0	502,000	13,625,000	98,929,000
Total reported	85.6	2,897,000	65,635,000	145,223,000
Estimated unreported	.....	348,000	4,000,000	3,350,000
*Estimated total	.....	3,245,000	69,635,000	148,573,000
*Estimated total previous week	.....	3,150,000	68,587,000	150,779,000
*December 18, 1937	.....	3,220,000	74,117,000	118,711,000

*Bureau of Mines, currently estimated.

Stocks of Crude Oil in the United States

(BUREAU OF MINES ESTIMATES)

Week ending December 3, 1938	271,065,000 barrels
Week ending November 26, 1938	270,563,000 barrels
Week ending December 4, 1937	303,034,000 barrels

Figures do not include stocks of heavy, unrefinable California crude.

Retail Oil Markets

Tank-wagon and filling station prices on gasoline and kerosene furnished by the larger marketing firms

Prices as of December 20, 1938

Taxes

The gasoline quotations given in the following tables include the 1-cent federal tax, as well as state, county, and city taxes. The gasoline is the regular or standard grade. In most areas lower grades and a premium grade also are available.

Standard Oil Co. (Indiana)

	Gasoline			Kero.
	Tank wag.	Dir.	Inc. tax	tank-wag.
Chicago, Ill.	15.1	12.1	4.0	10.0
Decatur	15.1	12.6	4.0	10.0
Joliet	15.1	12.6	4.0	10.0
Peoria	15.1	13.1	4.0	10.0
Quincy	14.9	12.9	4.0	9.8
Davenport, Ia.	15.1	13.6	4.0	‡10.0
Des Moines	14.9	13.4	4.0	‡9.8
Mason City	15.3	13.8	4.0	‡10.2
Duluth, Minn.	16.9	15.4	5.0	10.8
Mankato	16.5	15.0	5.0	10.4
Minneapolis	16.0	14.5	5.0	10.4
LaCrosse, Wis.	16.5	15.0	5.0	10.4
Green Bay	16.9	15.0	5.0	10.3
Milwaukee	16.3	14.8	5.0	10.2
Detroit, Mich.	14.3	11.6	4.0	9.0
Grand Rapids	14.8	13.05	4.0	9.7
Saginaw	15.8	14.3	4.0	9.3
Evansville, Ind.	16.6	15.1	5.0	†10.5
Indianapolis	16.8	15.3	5.0	†9.5
South Bend	17.1	15.6	5.0	†9.0
Fargo, N. Dak.	16.7	15.2	4.0	11.6
Minot	18.0	16.5	4.0	12.9
Huron, S. Dak.	17.0	15.5	5.0	10.9
Kans. City, Mo.*	14.4	11.9	4.0	7.5
St. Louis*	14.7	13.2	4.0	8.0
St. Joseph	14.4	11.2	4.0	9.3
Wichita, Kans.	13.9	10.6	4.0	7.3

*State tax 2 cents, 1-cent city tax and 1-cent federal tax. †Does not include 4-cent state tax. ‡Does not include 3-cent state tax.

Exclusive of state general sales taxes.

Discounts to commercial consumers: On purchases per month off tank-wagon prices: 1,000 gallons or more, 1.5 cents off; minimum delivery 25 gallons.

Stanolex Fuel Oil in Chicago

Effective November 1, 1938, f.o.b. Chicago tank-wagon prices: Standard range oil, 1-99 gallons, 9 cents; 100-149 gallons, 8 cents, 150 gallons and over, 7.5 cents. Stanolex fuel oil No. 1, 1-149 gallons, 8 cents; 150-399 gallons, 7 cents; 400 gallons and over, 6.5 cents. Stanolex furnace oil, 1-149 gallons, 8 cents; 150-399 gallons, 7 cents; 400 gallons and over, 6.5 cents. Stanolex grade A, 1-399 gallons, 4.75 cents; 400 gallons and over 3.75 cents. Stanolex grade B, 1-799 gallons, 4.75 cents; 800 gallons and over, 3.75 cents.

Atlantic Coast District

STANDARD OIL CO. OF NEW JERSEY

	Gasoline			Kero.
	Tank-wag. dlr.	Tank-car con'r.	Inc. tax	tank-wag.
Atl'tic City, N. J.	12.7	10.9	4.0	8.0
Newark	12.7	10.9	4.0	8.0
Annapolis, Md.	14.35	12.85	5.0	9.5
Baltimore	13.75	12.25	5.0	8.5
Cumberland	16.15	13.65	5.0	10.0
Wash'g'n, D. C.	12.0	10.50	3.0	9.5
Danville, Va.	16.95	14.45	6.0	12.9
Norfolk	15.75	13.25	6.0	11.5
Petersburg	16.05	13.55	6.0	11.7
Richmond	16.05	13.55	6.0	11.7
Roanoke	17.25	14.75	6.0	11.0
Charles'n, W. V.	16.55	14.05	6.0	12.6
Parkersburg	14.85	13.35	6.0	11.2
Wheeling	15.75	14.35	6.0	12.2
Charlotte, N. C.	18.15	15.65	7.0	12.1
Hickory	18.65	16.15	7.0	12.5
Mt. Airy	18.45	15.95	7.0	12.3
Raleigh	17.75	15.25	7.0	11.6
Salisbury	18.25	15.75	7.0	12.2
Charleston, S. C.	16.75	14.25	7.0	10.6
Columbia	17.25	15.25	7.0	11.6
Spartanburg	18.45	15.95	7.0	12.4

Price basis to commercial consumers, effective March 8, 1937, in Maryland, District of Columbia, and in Arlington and Fairfax counties in Virginia; and March 12 in New Jersey: To contract accounts purchasing at least one full compartment at time by hose connection, on yearly purchases: From 2,500 to 100,000 gallons, consumer tank-wagon price at time and place of delivery; 100,000 gallons per year, consumer tank-car price plus .5 cent per gallon. Consumer tank-wagon price generally will be equivalent to dealer tank-wagon price less .5 cent per gallon.

Effective May 15, 1937, in North and South Carolina, West Virginia and Virginia (except Arlington and Fairfax counties): Commercial consumers taking deliveries of 50 gallons (W. Va., 100 gallons) or more at one time will be billed at posted consumer tank-wagon price. Accounts taking deliveries of less than 50 gallons (W. Va., 100 gallons) will be billed at 4 cents per gallon over posted consumer tank-wagon price. Generally the posted consumer tank-wagon price will be the equivalent to the dealer price less .5 cent per gallon.

While the above prices continue at Atlantic City and Newark, N. J., dealers will pay a net price of 8.4 cents per gallon for Essolene. Dealers having pumps marked only "Esso, Essolene and 'Standard White'" gasoline will pay 7.9 cents for Essolene. Price basis to all other undivided dealers above is Essolene dealer tank-wagon price less .5 cent per gallon.

Discount for kerosene, 1 cent off tank-wagon price for 25 gallons or more under contract (contract not necessary in Baltimore) except no discount in New Jersey.

Southern District

STANDARD OIL CO. (KENTUCKY)

	Gasoline			Kero.
	Tank-wag.	Net dlr.	Inc. tax	tank-wag.
Atlanta, Ga.	20.5	17.5	7.0	8.5
Augusta	20.0	17.0	7.0	10.0
Macon	20.0	17.0	7.0	11.0
Savannah	19.0	16.0	7.0	9.0
Birm'ham, Ala.	21.0	18.0	8.0	8.5
Mobile	21.0	18.0	9.0	8.5
Montgomery	21.0	19.0	9.0	10.5
Jackson, Miss.	18.5	15.5	7.0	9.5
Vicksburg	19.5	16.5	7.0	9.0
Jacksonville, Fla.	20.0	17.0	8.0	8.0
Miami	20.0	17.0	8.0	8.0
Pensacola	21.0	18.0	9.0	8.0
Tampa	20.0	17.0	8.0	8.0
Lexington, Ky.	19.5	16.5	6.0	10.0
Covington	17.5	14.5	6.0	9.5
Louisville	17.5	14.5	6.0	9.0
Paducah	19.0	16.0	6.0	9.0

Price basis to tank-wagon consumers: Effective January 4, 1937; 3 cents per gallon below tank-wagon price. Effective June 4, 1938, 2 cents per gallon discount eliminated from all kerosene markets in Mississippi, Alabama, Georgia, and Florida, markets being reduced correspondingly to a net basis.

Montgomery, Ala., has a county tax of 1 cent per gallon, and a city tax of 1 cent per gallon on gasoline, in addition to state tax and 1 cent per gallon on kerosene. Mobile, Ala., has a city gasoline tax of 2 cents per gallon; Birmingham, Ala., has a city gasoline tax of 1 cent per gallon; Pensacola, Fla., has a city gasoline tax of 1 cent.

Rocky Mountain District

CONTINENTAL OIL CO.

	Gasoline		Kero.
	Dealer	Inc. tax	tank-wag.
Denver, Colo.	15.5	5.0	11.5
Grand Junction	19.0	5.0	15.0
Pueblo	16.5	5.0	10.5
Casper, Wyo.	17.0	5.0	11.5
Cheyenne	13.0	5.0	13.0
Billings, Mont.	18.0	6.0	13.0
Butte	19.5	6.0	15.5
Great Falls	19.0	6.0	15.5
Helena	20.0	6.0	15.5
Salt Lake City, Utah	16.0	5.0	16.0
Boise, Idaho	19.0	6.0	18.0
Twin Falls	19.5	6.0	18.0
Albuquerque, N. M.	17.5	*6.5	12.0

*Includes city tax of .5 cent.

Ohio

STANDARD OIL CO. OF OHIO

	Gasoline			Kero.
	Tank-wag. con'r.	Divided dlr.	Inc. tax	tank-wag.
Ohio points	16.0	15.0	5.0	*13.0

*Includes state tax of 1 cent.

Pacific Coast Territory

STANDARD OIL CO. OF CALIFORNIA

	Gasoline			Kero.
	Tank-wag.	Serv. sta.	Inc. tax.	tank-wag.
San Francisco	17.5	18.5	4.0	11.5
Los Angeles	17.0	18.0	4.0	10.0
Fresno, Calif.	18.5	19.5	4.0	12.5
Phoenix, Ariz.	21.5	22.5	6.0	*17.5
Reno, Nev.	20.5	21.0	5.0	13.5
Portland, Ore.	20.0	21.0	6.0	13.5
Seattle, Wash.	20.0	21.0	6.0	13.5
Spokane	23.0	24.0	6.0	16.5
Tacoma	20.0	21.0	6.0	13.5

*Includes 5-cent state tax.

Discounts to dealers: On gasoline, off tank-wagon price, to 100 per cent dealers, 3 cents; to split dealers, 2 cents. To commercial consumers: On tank-wagon price; on single deliveries of 40 gallons and over, advance quantity discount extended at time of delivery, 3 cents. Service station schedule applies on single deliveries less than 40 gallons. On kerosene in tankcar, transport truck and trailer delivery, 3 cents off tank-wagon price; plant deliveries to jobbers, 2.5 cents below tank-wagon.

New York and New England

SOCONY-VACUUM OIL CO., INC.

	Gasoline			Kero.
	T'wag. dealer	T'car consr.	Inc. tax	tank wag.
Albany	13.8	11.75	5.0	8.0
*Met. N. Y.:				
Manhat., Bronx	12.9	11.75	5.0	8.0
Staten Island	12.9	11.75	5.0	8.0
Q'ns & Bklyn.	12.9	11.75	5.0	8.0
Buffalo	12.9	12.6	5.0	7.5
Rochester	14.0	13.2	5.0	8.5
Syracuse	13.5	12.4	5.0	8.5
Boston, Mass.	12.5	10.5	4.0	7.5
Portland, Me.	14.0	11.75	5.0	8.75
Manch'ter, N. H.	14.5	12.3	5.0	8.5
Burlington, Vt.	14.7	12.3	5.0	9.0
Springf'd., Mass.	13.0	11.0	4.0	7.5
Worcester	13.0	11.0	4.0	8.0
Hartford, Conn.	12.9	10.9	4.0	6.5
New Haven	12.3	10.8	4.0	7.0
Providence, R. I.	12.5	10.5	4.0	7.5

*Does not include 2 per cent city sales tax which is calculated on basis of net retail price exclusive of state and federal taxes. Metropolitan New York prices are undivided dealer prices; others are split dealer.

Price basis to undivided dealer: Posted dealer tank-wagon price less .5 cent. Price basis to commercial consumer: Effective Nov. 15, 1936, monthly purchases of 25,000 gallons and over, consumer tankcar prices at delivery point plus .5 cent per gallon; monthly purchases of 5,000 to 25,000 gallons, undivided dealer price at delivery point; monthly purchases under 5,000 gallons, pay divided dealer tank-wagon prices at delivery point.

Pennsylvania, Delaware, and Part of New England

ATLANTIC REFINING CO.

	Gasoline			Kero.
	Tank-wag. dlr.	Tank-car con'r.	Inc. tax	tank-wag.
Phil'delphia, Pa.	13.0	12.0	5.0	10.0
Pittsburgh	15.0	13.0	5.0	10.5
Allentown	14.25	12.75	5.0	10.5
Erie	14.5	13.0	5.0	10.0
Scranton	14.5	13.0	5.0	10.5
Altoona	15.0	13.0	5.0	10.5
Dover, Del.	13.5	...	5.0	10.5
Wilmington	12.5	...	5.0	9.75

Price basis to undivided dealers, dealer tank-wagon price less .5 cent per gallon. Price basis to commercial consumers in Pennsylvania and Delaware, effective March 11, 1937: Consumers under contract using 100,000 gallons or more per year full compartment hose deliveries, tankcar plus .5 cent. Consumers under contract using less than 100,000 gallons per year compartment hose deliveries, undivided dealer price. Consumers under contract less than full compartment delivery, consumers not under contract, less than full compartment delivery, and consumers not under contract full compartment delivery, divided dealer price. Less than 25 gallons, tank-wagon delivery, 4 cents per gallon above undivided dealer price.

Central South District

STANDARD OIL CO. OF LOUISIANA

	Gasoline			Kero.
	Tank-wag. dlr.	Tank-car con'r.	Inc. tax	tank-wag.
N. Orleans, La.	19.25	16.75	*10.0	†11.0
Baton Rouge	17.25	14.75	8.0	‡10.5
Alexandria	17.25	14.75	8.0	‡12.5
Lafayette	17.50	15.00	8.0	‡12.5
Lake Charles	17.25	14.75	8.0	‡12.5
Shreveport	16.00	13.50	8.0	‡11.0
Knoxville, Tenn.	20.50	18.00	8.0	14.5
Memphis	18.50	16.00	8.0	12.5
Chattanooga	20.00	17.50	8.0	14.0
Nashville	17.50	17.00	8.0	12.0
Bristol	19.00	18.25	8.0	14.5

*Includes 2-cent parish tax. †Includes 1-cent parish tax and 1-cent state tax. ‡Includes 1-cent state tax.

Price basis to commercial consumers: Effective May 15, 1937, deliveries of 50 gallons or more in one delivery takes posted consumer tank-wagon price. Accounts taking deliveries of less than 50 gallons at one time pay posted consumer tank-wagon price plus 4 cents per gallon. Generally, the posted consumer tank-wagon price will be equivalent to the dealer price less .5 cent per gallon. Kerosene prices include 1-cent state tax.

Nebraska

STANDARD OIL CO. OF NEBRASKA

	Gasoline			Kero.
	Tank-wag.	Dlr.	Inc. tax	tank-wag.
Omaha	17.5	16.0	6.0	10.3
McCook	17.5	16.0	6.0	10.0
Norfolk	17.9	14.9	6.0	10.7
North Platte	18.3	15.4	6.0	11.0
Scottsbluff	17.0	13.9	6.0	11.8

Discounts to commercial consumers for tank-wagon deliveries covered only by standard commercial consumers contract, effective Jan. 1, 1935.

Oklahoma and Arkansas

CONTINENTAL OIL CO.

	Gasoline		Kero.
	Dealer	Inc. tax	tank-wag.
Muskogee, Okla.	13.5	5.0	7.0
Oklahoma City	12.5	5.0	7.0
Tulsa	12.0	5.0	6.0
Fort Smith, Ark.	14.25	5.0	7.5
Little Rock	16.75	7.5	9.0
Texarkana	14.0	5.0	8.0

Texas

	Gasoline			Kero.
	Tank-wag.	Serv. sta.	Inc. tax	tank-wag.
Dallas, Tex.	14.0	17.0	5.0	8.0
Fort Worth	15.0	19.0	5.0	8.0
Houston	14.5	19.0	5.0	8.0
San Antonio	14.0	18.0	5.0	8.0

Naphtha

STANDARD OIL CO. (INDIANA)

	Tank-wagon*
Oleum spirits	15.7
V.M.&P. naphtha	16.0
Cleaners' naphtha	15.0
Stanisol	15.0

*Prices include 3-cent Illinois tax, but not 1-cent federal tax or 2 per cent retail occupational tax.

Prices f.o.b. Chicago. Each price subject to discount of 1 cent per gallon for 150-gallon lots if covered by contract.

Canada*

3-Star Imperial Gasoline
IMPERIAL OIL, LTD.

	Tank-wag.	Inc. tax	Kero. tank-wag.
Halifax, N. S.	23.5	10.0	17.5
St. John, N. B.	23.5	10.0	17.5
Montreal, Que.	20.0	6.0	14.5
Toronto, Ont.	21.0	6.0	15.5
Hamilton, Ont.	21.0	6.0	15.5
Winnipeg, Man.	27.5	7.0	20.7
Brandon, Man.	28.1	7.0	22.9
Regina, Sask.	26.0	7.0	22.0
Saskatoon, Sask.	28.3	7.0	24.9
Edmonton, Alta.	26.5	7.0	21.5
Calgary, Alta.	23.5	7.0	19.0
Vancouver, B. C.	23.0	7.0	23.0

*Imperial gallon used in Canada.

Divided dealers pay tank-wagon prices. Discount to undivided dealers, 1 cent below tank-wagon price. In maritime provinces both divided and undivided dealers pay tank-wagon price.

Tank-Wagon Changes

Standard Oil Co. (Nebraska) December 12 reduced tank-wagon gasoline 2 cents in Scottsbluff.

Socony-Vacuum Oil Co., Inc., December 9 reduced dealer gasoline .1 cent. Increased tank-wagon kerosene December 12 in New Haven 1 cent; reduced tank-wagon kerosene .5 cent in Burlington November 16; Springfield, November 10; Hartford November 14.

New York Market

(Continued from Page 103)

bricating oil market is practically unchanged from the past few weeks. Some refiners are offering 25 pour test neutral, 150 viscosity, at 13 cents which is a cent lower than prevailed at the start of the month, but several suppliers are clinging to the higher figure on the strength of contract customer demand which is keeping them fairly well sold up to production.

Wax prices at all points are firm and shipments are reported in fair balance with supplies. If any change is reportable it is in the diminishment of suppliers offering on the low side of the price range, but there has been no change in the top side of 2.40 cents for scale grades.

Prices of Refined Products

All quotations f.o.b. plant in cars for interstate or export movement except as otherwise noted

Prices as of December 20, 1938

The following quotations are exclusive of the federal excise taxes of 1 cent a gallon on gasoline and 4 cents a gallon on lubricating oils.

Refinery Gasoline

OKLAHOMA (Group 3)—

U. S. Motor grades:		
62 octane and below	.03⅜	.03½
63-66 octane	.03⅞	.04
67-69 octane	.04⅛	.04¼
70-72 octane (regular)	.04⅜	.04½
60-62 400 grades:		
62 octane and below	.03⅜	.03⅝
63-66 octane	.03⅞	.04
67-69 octane	.04⅛	.04¼
70-72 octane (regular)	.04⅜	.04⅝
64-66 375	.04	.04⅛
68-70 360	.05	.05⅛

NORTH TEXAS—

U. S. Motor grades:		
62 octane and below	.03⅜	.03½
63-66 octane	.03⅞	.04
67-69 octane	.04¼	.04½
70-72 octane (regular)	.04⅜	.04⅝
60-62 400	.03⅜	.03⅝
64-66 375	.04	.04⅛

NORTH LOUISIANA (Ark. and N. La. delivery)—

U. S. Motor grades:		
62 octane and below	.04	.04¼
63-66 octane	.04¼	.04½
67-69 octane	.04½	.04¾
70-72 octane (regular)	.04⅞	.05⅛

ARKANSAS (Ark. and N. La. del.)—

U. S. Motor grades:		
62 octane and below	.04	....
67-69 octane	.05	.05⅛

CHICAGO (Based on Group 3)—

U. S. Motor grades:		
62 octane and below	.03½	.04
63-66 octane	.03⅞	.04⅛
67-69 octane	.04⅛	.04⅜
70-72 octane	.04⅜	.04⅝
60-62 400 grades:		
62 octane and below	.03½	.03⅝
63-66 octane	.03⅞	.04⅛
67-69 octane	.04⅛	.04⅜
70-72 octane	.04⅜	.04⅝
64-66 375	.04	.04¼
68-70 360	.05	.05¼

PENNSYLVANIA (inland refineries)—

58-60 U. S. Motor:		
Below 60 octane	.04¼	.04¾
65 octane		.06¼
68-70 octane		.06½

CALIFORNIA (domestic movement)—

54-58 U. S. Motor	.06½	.08
58-60 400, 65 oct. and higher	.07½	.09

EAST COAST (domestic)—

U. S. Motor, 60-64.9 octane:		
New York (Bayonne)	.06	.06¼
Philadelphia	.06	.06¼
Boston	.06¼	.06½
Baltimore	.06	.06¼
Charleston, S. C.	.06¾	.07
U. S. Motor, 65 and above:		
*New York (Bayonne)	.06½	.06¾
Philadelphia	.06½	.06¾
Baltimore	.06½	.06¾
Charleston, S. C.	.07	.07¼

*All grades of gasoline one-eighth to one-fourth cent less for barge shipments. New York Harbor prices are for New York and New England delivery. Prices for New Jersey delivery one-fourth cent lower.

GULF COAST (domestic)—

U. S. Motor grades:		
Below 60 octane		.04¼
60-64.9	.04½	.04⅝
65 octane and higher		.04⅝
68-70		.05

Naphtha

PENNSYLVANIA (inland refineries)—

52-56 450 (blending)	.04¼	.04½

Natural Gasoline

OKLAHOMA (Group 3)—

Grade 26-70		.03¾
Grade 18-55	.04⅜	.04½

NORTH TEXAS—

Grade 26-70		.03½
Grade 18-55	.03⅞	.04

CALIFORNIA—

75-85 375-390	.06¼	.06¾

NORTH LOUISIANA (Ark. and N. La. delivery)—

Grade 26-70		.03⅝

Tractor Fuel

OKLAHOMA (Group 3)—

40-42 gr., 315-325 l.b.p., 110-flash, 540-550 e.p.	.03¾	.03⅞
41-43 gr., 300-320 l.b.p., 110-125 flash, 500-520 e.p.	.04	.04¼
46-48 gr., 210-230 l.b.p., 480 max., e.p.	.04⅜	.04⅝

Kerosene

(All kerosene water white)

OKLAHOMA (Group 3)—

41-43	.03⅞	.04
42-44	.04⅛	.04¼

NORTH TEXAS—

41-43	.04	.04⅛

NORTH LOUISIANA (Ark. and N. La. delivery)—

41-43	.04	.04⅜

ARKANSAS (Ark. and N. La. del.)—

41-43		.04½

PENNSYLVANIA (inland refineries)—

45	.04⅝	.04⅞
46	.04¾	.05
47	.04⅞	.05⅛

CHICAGO (Based on Group 3)—

41-43	.03⅞	.04⅛
42-44	.04⅛	.04⅜

CALIFORNIA (Pac. Coast market)—

38-43 high burning test	.04¾	.05¾

NEW YORK (Bayonne, N. J.)—

41-43	.04⅝	.04¾

***GULF COAST (domestic)—**

41-43	.03⅞	.04

*Barge price one-eighth cent lower.

Furnace Oil

OKLAHOMA (Group 3)—

Range oil	.03¾	.03⅞
No. 1 prime white, 38-42	.03⅝	.03¾
No. 1 straw, 38-40	.03½	.03⅝
No. 2 straw, 32-36	.03⅝	.03½
No. 2 dark, 32-36	.03¼	.03⅜
No. 3 zero to 15, 28-32	.03¼	.03⅜
No. 3, 15 and above, 28-32	.02⅞	.03

NORTH TEXAS—

No. 1 prime white, 38-42	.03¾	.03⅞
No. 1 straw, 38-40	.03⅝	.03⅞

NORTH LOUISIANA (Ark. and N. La. delivery)—

No. 2, 32-36	.03¼	.03½

ARKANSAS (Ark. and N. La. del.)—

No. 2, 32-36		.03⅝

CHICAGO (Based on Group 3)—

Range Oil	.03¾	.04
No. 1 prime white, 38-40	.03⅝	.03⅞
No. 1 straw, 38-40	.03½	.03¾
No. 2 straw, 32-36	.03⅝	.03⅝
No. 2 dark, 32-36	.03¼	.03½
No. 3, zero to 15, 28-32	.03½	.03⅝
No. 3, 15 and above, 28-32	.02⅞	.03

NEW YORK (Bayonne, N. J.)—

*No. 1	.04½	.04⅝
*No. 2		.04
*No. 4		.04

*Barge deliveries one-eighth to one-fourth cent under above tankcar price.

Gas Oil and Fuel Oil

(Gas oil per gal., fuel oil per bbl.)

OKLAHOMA (Group 3)—

U.G.I. gas oil	.02¾	.02⅞
No. 4, low pourpoint, 24-28	1.00	1.10
No. 4, 15 and above, 24-28	.85	.90
No. 5, low pourpoint, 18-22	.70	.75
Below 18 fuel oil, industrial	.50	.60

NORTH TEXAS—

U.G.I. gas oil	.02¾	.03
No. 4, low pourpoint, 24-28	1.00	1.10
No. 5, low pourpoint, 18-22	.70	.75
Below 18 fuel oil, industrial	.50	.60

NORTH LOUISIANA (Ark. and N. La. delivery)—

10-14 fuel oil, industrial	.70	.75

CHICAGO (Based on Group 3)—

U.G.I. gas oil	.02¾	.02⅞
No. 4, low pourpoint, 24-28	1.00	1.10
No. 4, 15 and above, 24-28	.85	.95
No. 5, low pourpoint, 18-22	.70	.80
No. 5, 15 and above, 18-22	.60	.70
No. 6, low pourpoint, 10-16	.60	.70
No. 6, 15 and above, 10-16	.35	.45

PENNSYLVANIA (inland refineries)—

36-40	.03¾	.04⅛

CALIFORNIA—

Los Angeles:		
30-40 gas oil, per bbl.	1.15	1.35
24 plus Diesel, per bbl.	1.00	1.30
24 plus Diesel (bunkers)	1.15	1.50
12-16 (bunkers at tidewater)	.75	.90
10-16 (cargo lots)	.80	.80
12-17 (tankcars)	.50	.80
10-17 (high sulfur)	.45	.70
San Joaquin Valley:		
10-18 (tankcars)	.50	.80
24 plus Diesel, per bbl.	1.15	1.40
San Francisco:		
24 plus Diesel, per bbl.	1.40	1.45
24 plus Diesel (bunkers)	1.45	1.55
10-16 (bunkers)	.90	.95

GULF COAST—

No. 2 fuel		.03¼
43-47 Diesel		.03¼
48-52 Diesel	.03½	.03⅝
53-57 Diesel	.03⅝	.03¾
Bunker C (bulk cargoes)		.70
Bunker C (bunkers)		.75

NEW YORK (Bayonne, N. J.)—

27 plus, gas oil		.04¼
28-30 Diesel (lighterage 6¼c per bbl.)		1.75
28-30 Diesel (tankcars)	.04¼	.04½
Bunker C (to ocean-going ships in N. Y. Harbor)		.95
Industrial fuel (tankcars)	.03¾	.04

Lighterage charge 5c bbl. additional.

Bright and Steam Refined

OKLAHOMA (Group 3)—

190-200 D. 15-25		.19
150-160 D. 0-10	.14¼	.16
150-160 D. 15-25	.13½	.15½
150-160 E. 15-25	.13	.15
100-110 D. 0-10		.14½
Steam refined:		
631 green (treated)		.12½
600 dark green (untreated)	.04½	.05

PENNSYLVANIA—

Bright Stocks (Pennsylvania Grade No. 8 color, 140-150 at 210, 545-550 flash):		
10 pourpoint	.15	.15½
15 pourpoint	.14	.14½
20 pourpoint	.13	.13½
25 pourpoint	.12	.12½
Steam refined:		
600	.08	.08½
650	.10	.10½
600 Pennsylvania flash	.10½	.11
630 flash	.13½	.14
600 Warren E filtered	.12½	.13

Neutral Oil

(Vis. at 100° F. except Pennsylvania and color N.G.A.)

OKLAHOMA (Group 3)—

150-3		.09
180-3		.10
180-4		.09½
200-3		.10½
200-4		.10
250-3		.11½
250-4		.11
280-3		.12½
280-4		.12
300-6½		.13
400-3½		.14
100-2½ paraffin oil		.06
15-20 pourpoint:		
200-3		.10
200-4		.09½
250-3		.11
250-4		.10½
280-3		.12
280-4		.12½

GULF COAST—

Pale oils:		
200-3	.07	.07¼
300-3	.07½	.07⅝
500-3½	.08½	.08¾
750-3½	.08⅝	.09¼
1,200-3½	.09½	.09¾
1,500-4	.09¾	.10
Red oils:		
200-5-6	.07¼	.07½
300-5-6	.07¾	.07⅞
500-5-6	.08	.08½
750	.08¾	.09
1,200-5-6	.09¼	.09½

CALIFORNIA (moving to dom. market)—

Pale oils:		
100-2½-3	.07¼	.08
200-2½-3	.07¼	.08
300-2½-3	.07¼	.08
400-3-4	.07½	.08
450-3-4	.07¼	.08
550-3-4	.09	.11
600-3-4	.09	.11
Red oils:		
200-4-5	.07¼	.08
300-5-6	.07¼	.08
350-5-6	.09¼	.11½
400-5-6	.09¼	.11½
450-5-6	.09¼	.11½
500-5-6	.09¼	.11½
600-5-6½	.09¼	.11½
700-6½ plus	.09¼	.11½
750-6½ plus	.09¼	.11½
900-6½ plus	.09¼	.11½

PENNSYLVANIA—

150 vis. at 70° color, 400-405 flash:		
Zero pourpoint	.16	.16½
10 pourpoint	.15	.15½
15 pourpoint	.14	.14½
25 pourpoint	.13	.13½
200 vis. at 70° F., 3 color:		
Zero pourpoint	.18	.18½
10 pourpoint	.17	.17½
15 pourpoint	.16	.16½
25 pourpoint	.15	.15½

Wax and Petrolatum

(Prices per pound)

OKLAHOMA (Group 3)—

124-126 (a.m.p.) w.c. scale	.0235	.0250

PENNSYLVANIA (inland refineries)—

122-124 (a.m.p.) w.c. scale	.0235	.0245
124-126 (a.m.p.) w.c. scale	.0235	.0245

NEW YORK—

Wax in bags fully refined:		
122-125 (a.m.p.) wax		.0375
125-127 (a.m.p.) wax		.0390
128-130 (a.m.p.) wax		.0400
130-132 (a.m.p.) wax		.0435
133-135 (a.m.p.) wax		.0465
135-137 (a.m.p.) wax		.0490
124-126 (a.m.p.) w.s.		.0230
124-126 (a.m.p.) y.s.		.0230
Petrolatum in barrels, carload lots:		
Dark green	.02	.02½
Amber	.02¾	.02½
Extra amber	.02⅝	.02¾
Lily white	.05½	.05¾
Snow white	.06½	.06¾
Cream	.04⅛	.04¼

Export Prices

GASOLINE

GULF COAST—

U. S. Motor	.04¾	.04½
60-62 400	.04¾	.04½
61-63 390	.04½	.04⅝
64-66 375	.04½	.04⅝

LOS ANGELES—

U. S. Motor grades:		
55-65 octane		.05
65-69 octane		.05¼
Above 69 octane		.05½

KEROSENE

GULF COAST—

41-43 prime white	.03¾	.04
41-43 water white	.03¾	.04

LOS ANGELES—

41-43 water white	.05	.05¼

LUBRICANTS

(Pennsylvania Grade)

NEW YORK (f.o.s. in bbls.)—

Cylinder stocks:		
600 Warren E	.15	.15½
600 S.R. unfiltered	.16	.16½
630 S.R. unfiltered	.17	.17½
600 flash, S.R.	.17	.17½
630 flash, S.R.	.20½	.21
Bright stock:		
8 color	.16¼	.16½

NEUTRAL OIL

200-3 color	.21½	.22
150-3 color	.19½	.20

PARAFFIN WAX

NEW YORK (prices per pound)—

123-125 a.m.p.		.0375
125-127 a.m.p.		.0387
128-130 a.m.p.		.0412
133-135 a.m.p.		.0437
135-137 a.m.p.		.0455
Crude scale:		
124-126 w.s.	.0235	.0245
124-126 y.s.	.0235	.0245

Crude Oil Prices

Oklahoma, Kansas, North Central and East Central Texas

East Texas (Oct. 11, 1938)*	$1.10
Van, Tex. (Oct. 11, 1938)*	.93
Talco, Tex. (Oct. 11, 1938)*	.55
Rodessa, Tex.	
See North Louisiana gravity schedule	
Cass and Panola counties, Texas	
See gravity schedule	
Altus and Tipton†	See note below
Cayuga, Tex. (Oct. 12)	.81
Clay Creek, Tex.	.85

*Humble Oil & Refining Co. †Gulf Refining Co.

Altus and Tipton, Okla., starting at below 25 degrees at 71 cents, 2-cent spread to 40 degrees and above at $1.03. East Texas price met by all buyers posting prices. Talco price adopted by Talco Pipe Line on October 11. Cayuga posted by Tide Water Associated Oil Co. Clay Creek posted by Sun Oil Co.

Gulf Coast

Conroe, Tex. (Oct. 11, 1938)*	$1.27
Black Bayou and White Castle, La. (Oct. 11, 1938)†	See note below
Gibson, La. (Oct. 11, 1938)†	1.04
Garden Island, La. (Oct. 12, 1938)‡	1.24
Lafitte, La. (Oct. 12, 1938)‡	1.04
Cleveland, Tex. (Oct. 12, 1938)†	1.14
Hardin, Tex. (Oct. 12, 1938)†	1.02
Tepetate, La. (Oct. 11, 1938)§	1.03
Villa Platte, La. (Oct. 11, 1938)§	1.03
Abbeville, La. (Oct. 11, 1938)§	See note below
Bosco, La. (Oct. 13, 1938)§	1.02
Creole, La. (Oct. 12, 1938)§	.96
Gueydan, Sweet Lake and Louise, La. (Oct. 13, 1938)§	See note below
Vinton, Edgerly, Starks, Hackberry, Timbalier Bay, Quarantine Bay, and Grand Bay, La. (Oct. 13, 1938)**	
Long Lake, Tex. (Oct. 13, 1938)**	1.08
Segno and Wing (Oct. 13, 1938)**	See note below
Livingston (Oct. 11, 1938)†	1.10
Gibson, La. (Oct. 11, 1938)†	1.04

*Humble Oil & Refining Co. †Shell Petroleum Corp. ‡The Texas Co. §Continental Oil Co. ¶Magnolia Petroleum Co. ‖Pure Oil Co. **Gulf Refining Co.

Black Bayou, etc., starts at below 20 degrees at 79 cents; 20-20.9, 81 cents; 21-21.9, 83 cents, then a 3-cent spread to 26-26.9 degrees, 98 cents, and 27 degrees and over $1. Abbeville starts at below 36 degrees, $1.01, 2-cent spread to 40 degrees and over at $1.11. Gueydan, etc., starts at below 20 degrees, 79 cents, 3-cent spread to 26-26.9 degrees at $1, and 2-cent spread to 40 degrees and over at $1.28. Segno and Wing take Gulf Refining Co.'s Gulf Coast prices. Vinton, Edgerly, etc., schedule starts at below 18 gravity, 76 cents, 2-cent spread to 20-20.9 at 82 cents; then a 3-cent spread to 26.9 at $1; then a 2-cent spread to 34 degrees and over at $1.16.

Southwest Texas

Salt Flat, Darst Creek, Hilbig, Carroll, Clark and Zoboroski (Oct. 11, 1938)*	$ .96
Pettus (Oct. 11, 1938)*	1.29
Flour Bluff (Dec. 3, 1938)*	1.23
Darst Creek (Oct. 12, 1938)†	.96
Darst Creek and Bruner (Oct. 13, 1938)‡	.96
Luling (Oct. 12, 1938)†	.87
Lytton Springs (Oct. 12, 1938)†	.99
Mirando (Oct. 12, 1938)†	
Government Wells (Oct. 13, 1938)	See note below

*Humble Oil & Refining Co. †Magnolia Petroleum Co. Pettus price adopted by Atlantic Crude Oil Purchasing Co. ‡Gulf Refining Co.

Government Wells posted by Sun Oil Co. starts at 20 gravity, 77 cents, 3-cent spread to 24-24.9 at 89 cents.

North Louisiana and Arkansas

Smackover, Ark. (Oct. 5, 1938)*	$ .73
Buckner, Magnolia and Village, Ark. (Oct. 5, 1938)*	See note below
Schuler, Jones sand	See note below
Tullos and Urania	.89
El Dorado east field	
Lisbon, La. (Sept. 19, 1938)	See note below

*Smackover posted by Standard Oil Co of Louisiana, October 5, 1938; by Magnolia Petroleum Co., October 12; by Gulf Refining Co., October 13; McMillan Refining Co. and Cross Refining Co. met price. Tullos and Urania posted by Hunt Oil Co. and Arkansas Fuel Oil Co.

Schuler Jones sand schedule starts at below 25 degrees, 66 cents, with 2-cent spread to 40 and over at 98 cents; by Lion Oil Refining Co. on October 5, 1938. Schuler light Morgan sand crude takes North Louisiana gravity scale along with El Dorado and Champagnolie; by Lion Oil Refining Co., October 5; Buckner, Magnolia and Village schedules posted by Standard Oil Co. of Louisiana and Lion Oil Refining Co. on October 5; quote same prices as for Schuler Jones sand crude.

Middle Western States

OHIO OIL CO.
(Effective October 13, 1938)

Lima, Ohio	$ .90
Illinois old fields	1.08
Illinois basin	1.18
Princeton, Ind.	1.05
Western Kentucky	1.10
Greendale, Porter and Crystal, Mich. (Dec. 19, 1938)*	.78½
Buckeye, Bentley, Edenville, Beaverton, Mich. (Dec. 19, 1938)*	.76
Freeman-Redding, Mich. (Dec. 19, 1938)*	.68
West Branch and Arenac, Mich. (Dec. 13, 1938)*	.70
Muskegon	1.00
Sherman, Mich. (Dec. 13, 1938)‡	.82
Eastern Kentucky:	
Big Sandy River (Oct. 1, 1938)†	1.22
Kentucky River (Oct. 1, 1938)†	1.30

*Simrall Corp. †Ashland Refining Co. ‡Pure Transportation Co.

Rocky Mountain States

Dry Creek, Wyo. (Oct. 11, 1938)*	$ .92
Elk Basin, Wyo. (Oct. 11, 1938)*†	.90
Grass Creek, light, Wyo. (Oct. 11, 1938)*†	.90
Grass Creek, heavy (Oct. 11, 1938)†	.40
Lance Creek, Wyo. (Oct. 11, 1938)*	.77
Rock Creek, Wyo. (Oct. 11, 1938)*	1.00
Iles, light, Colo. (Oct. 11, 1938)†	.98
Iles, heavy, Colo. (Oct. 11, 1938)†	.92
Dutton Creek, Wyo. (Oct. 11, 1938)†	See note below
Frannie, light, Wyo. (Oct. 11, 1938)†	.55
Frannie, heavy, Wyo. (Oct. 11, 1938)†	.42
Hamilton dome, Wyo. (Oct. 11, 1938)†	.35
Midway, Wyo. (Oct. 11, 1938)†	See note below
Salt Creek Tensleep crude, Wyo. (Oct. 11, 1938)†	.646
Salt Creek (Oct. 11, 1938)	See note below
Canon City, Colo. (Oct. 11, 1938)‡	.90
Florence, Colo. (Oct. 11, 1938)‡	.90
Cat Creek, Mont. (Oct. 11, 1938)‡	1.10
Big Muddy, Wyo. (Oct. 11, 1938)‡	.98
Lance Creek, Wyo. (Oct. 11, 1938)‡	.77
Lea County, N. M.	See West Texas gravity schedule‡
Artesia, Jackson and Maljamar	See gravity table‡
Fort Collins and Wellington, Colo.	See gravity table‡
Eddy County, N. M. (October 11, 1938)†	.77

*Ohio Oil Co. †Stanolind Oil & Gas Co. ‡Continental Oil Co. ¶Sinclair Prairie Oil Marketing Co.

Dutton Creek and Salt Creek Tensleep crude start at below 29 degrees, 86 cents. 2 cents spread to 40 and over at $1.10. Salt Creek crude excepting Tensleep, takes Standard Oil Co. of Indiana Oklahoma-Kansas prices. Stanolind Oil & Gas Co., effective October 11, discontinued posting prices in Greybull-Torchlight, Wyo., and Hogback and Hospah, N. M.

Eastern States

TIDE WATER ASSOCIATED OIL CO. and NEW YORK TRANSIT CO
(Effective September 1, 1938)

Bradford, Pa.	$1.68
Allegany, N. Y.	1.68

SOUTH PENN OIL CO.
(Effective September 1, 1938)

Pennsylvania Grade Oil in National Transit Lines (Bradford field)	$1.68
Pennsylvania Grade Oil in Southwest Pennsylvania Lines	1.34
Pennsylvania Grade Oil in Eureka Pipe Line lines	1.36
Pennsylvania Grade Oil in Buckeye Pipe Line lines	1.18
Corning Grade Oil in Buckeye Pipe Line Co. line (Oct. 18, 1938)	.97

PENNZOIL CO.

Group A	$1.61
Group B	1.60
Group C	1.59
Group D	1.58
Group E	1.56

PURE OIL CO.
(Effective September 1, 1938)

West Virginia	$1.26

West Texas

See gravity table.	
Pecos County (Oct. 11, 1938)*	$ .79
Pecos shallow (Oct. 11, 1938)†	.65

*Shell Petroleum Corp., Gulf Pipe Line Co. and Humble Oil & Refining Co. †Shell Petroleum Corp.

Crude Oil Price Changes

Effective December 19, Simrall Corp., Mount Pleasant, Mich., reduced prices 14 cents in most of the Michigan fields in which it purchases crude oil. The new scale reads: For Greendale, Porter and Crystal fields crude, 78½ cents per barrel; Buckeye, Bentley, Edenville and Beaverton crudes, 76 cents; for Freeman crude, 68 cents. No change was made in West Branch and Arenac crudes, for which the price is 70 cents per barrel.

Rocky Mountain Runs

Production estimates for week ended December 17:

	Bbls.
WYOMING	
Salt Creek	15,060
Big Muddy	1,180
Badger Basin	180
Black Mountain	130
Bryon	5,070
Cody dome	80
Cole Creek	110
Dallas Derby	350
Dewey dome	10
Dutton Creek	60
Elk Basin	560
Frannie	1,840
Garland	1,930
Grass Creek	1,890
G. P. dome	20
Hidden dome	80
Hudson	230
Iron Creek	30
LaBarge	990
Lance Creek	11,660
Lost Soldier	1,920
Mahoney	210
Medicine Bow	2,950
Mule Creek	200
Midway	40
Oregon Basin	1,800
Osage	760
Quealy dome	690
Rock River	2,350
Spindletop	30
Poison Spider	240
Teapot	20
Warm Springs	140
Wertz	1,490
Total Wyoming	54,300
MONTANA	
Border	40
Cat Creek	560
Cut Bank	7,380
Dry Creek	760
Kevin-Sunburst	3,460
Pondera	610
Total Montana	12,810
COLORADO	
Florence	140
Fort Collins & Wellington	340
Wilson Creek	1,700
Iles dome	2,100
Moffat	270
Orchard	20
Rangely	50
Tow Creek	120
Price	520
Total Colorado	3,830
NEW MEXICO	
Cooper	4,430
Eaves	820
Eunice	22,730
Hardy	2,630
Hobbs	11,630
Jal	940
Langlie	4,400
Lynch	510
Lynn	810
Mattix	3,070
Monument	23,270
North Lynch	40
Penrose	5,420
Rhoades	160
Skelly	1,800
South Eunice	2,950
Vacuum	5,310
Empire State	50
Artesia-Maljamar	5,970
Getty	300
Hogback	200
Rattlesnake	640
Table Mesa	80
Total New Mexico	98,160

Crude Prices by Gravities

	Oklahoma	Oklahoma and Kansas	North and Central Texas	Louisiana and Arkansas	East Central Texas	Gray County, Texas	Hutchinson and Carson counties, Texas	Raccoon Bend, Satsuma and Tomball, Texas	West Texas and Lea County, N. M.	Fort Collins and Wellington, Colo.	Anahuac and Dickinson, Texas	Refugio, Texas	Mirando and Duval Texas	Gulf Coast Texas	Cass and Panola counties, Texas	Beaumont and West Beaumont, Texas	Lockport, Iowa, Cameron Meadows, Louisiana	Artesia, Jackson and Maljamar, N. M.	Iowa, Louisiana
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Below 18	....	....	....	....	....	....	....	....	$.53	....	$.74	$.79	$.74	$.79	....	....	$.74	....	$.75
18-18.9	....	....	....	....	....	....	....	....	.53	....	.74	.79	.74	.79	....	$.79	.76	....	.77
19-19.9	....	....	....	....	....	....	....	....	.55	....	.77	.82	.77	.82	....	.82	.78	....	.79
20-20.9	$.80	$.70	....	....	....	....	....	....	.57	....	.80	.85	.80	.85	....	.85	.80	....	.81
21-21.9	.83	.72	....	....	....	....	....	....	.59	....	.83	.88	.83	.88	....	.88	.82	....	.83
22-22.9	.86	.74	....	....	....	....	....	$.95	.59	....	.83	.88	.83	.88	....	.88	.85	....	.86
23-23.9	.89	.76	....	....	$.78	....	....	.97	.61	....	.86	.91	.86	.91	....	.91	.88	....	.89
24-24.9	.92	.78	$.71	....	.80	....	....	.99	.63	....	.89	.94	.89	.94	....	.94	.91	....	.92
Below 25	....	....	....	$.73	....	....	....	....	....	....	....	....	....	....	$.73	....	....	....	....
25-25.9	.75	.80	.73	.75	.82	....	....	1.01	.65	....	.92	.97	.92	.97	.75	.97	.94	....	.95
26-26.9	.78	.82	.75	.77	.84	....	....	1.03	.67	....	.95	1.00	.95	1.00	.77	1.00	.97	....	.98
27-27.9	.81	.84	.77	.79	.86	....	....	1.05	.69	....	.97	1.02	.97	1.02	.79	1.02	.99	....	1.00
28-28.9	.84	.86	.79	.81	.88	$.72	$.67	1.07	.71	$.81	.99	1.04	.99	1.04	.81	1.04	1.01	$.61	1.02
29-29.9	.87	.88	.81	.83	.90	.74	.69	1.09	.73	.83	1.01	1.06	1.01	1.06	.83	1.06	1.03	.63	1.04
Below 30	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
30-30.9	.90	.90	.83	.85	.92	.76	.71	1.11	.75	.85	1.03	1.08	1.03	1.08	.85	1.08	1.05	.65	1.06
31-31.9	.92	.92	.85	.87	.94	.78	.73	1.13	.77	.87	1.05	1.10	1.05	1.10	.87	1.10	1.07	.67	1.08
32-32.9	.94	.94	.87	.89	.96	.80	.75	1.15	.79	.89	1.07	1.12	1.07	1.12	.89	1.12	1.09	.69	1.10
33-33.9	.96	.96	.89	.91	.98	.82	.77	1.17	.81	.91	1.09	1.14	1.09	1.14	.91	1.14	1.11	.71	1.12
34-34.9	.98	.98	.91	.93	1.00	.84	.79	1.19	.83	.93	1.11	1.16	1.11	1.16	.93	1.16	1.13	.73	1.14
Below 35	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
35-35.9	1.00	1.00	.93	.95	1.02	.86	.81	1.21	.85	.95	1.13	1.18	1.13	1.18	.95	1.18	....	.75	....
36-36.9	1.02	1.02	.95	.97	1.04	.88	.83	1.23	.87	.97	1.15	1.20	1.15	1.20	.97	1.20	....	.77	....
37-37.9	1.04	1.04	.97	.99	1.06	.90	.85	1.25	.89	.99	1.17	1.22	1.17	1.22	.99	1.22	....	.79	....
38-38.9	1.06	1.06	.99	1.01	1.08	.92	.87	1.27	.91	1.01	1.19	1.24	1.19	1.24	1.01	1.24	....	.81	....
39-39.9	1.08	1.08	1.01	1.03	1.10	.94	.89	1.29	.93	1.03	1.21	1.26	1.21	1.26	1.03	1.26	....	.83	....
40 and over	1.10	1.10	1.03	1.05	1.12	.96	.91	1.31	.95	1.05	1.23	1.28	1.23	1.28	1.05	1.28	....	.85	....

Effective December 3, 1938, Humble Oil & Refining Co. revised its October price schedules as shown in Columns 3, 6, 7, 8, 11, 12 and 13. The only changes made were the discontinuance of prices on crude of 41, 42, 43, 44 and 45 degrees and over. Humble's new schedule stops at 40 degrees and over. Companies that met Humble's schedule of October 11, have conformed to the revised price schedule, stopping at 40 degrees and over.

New or Improved Equipment

Mathey Measuring-Line Reel Is Light Enough to Go in Coupe

The Type G Mathey measuring-line reel is designed for use in wells that do not require the great line capacities of the larger units. The entire unit is self-contained, with gasoline engine mounted on a handy carrying skid. It is 32 inches long, 19 inches wide, and 17 inches high. It weighs 275 pounds with 5,000 feet of line on the drum. Two men can carry it. Owing to its compactness and light weight it can be transported in the back of a small coupe. No changes for special mountings are required.

Capacity of the drum is 6,000 feet of .066 line. The reel is ball-bearing equipped throughout. A special type of clutch prevents any sudden jolt or snap on the line when power is applied. Besides the regular combination clutch and brake the unit has an extra emergency brake. Mathey measure meter and accessories are available.

This unit rounds out the C. A. Mathey line of measuring units for depths of wells, locating fluid levels, running bottom-hole pressure and temperature bombs, running inclination devices and shots.

McClain Heads Chicago Office

Clark Brothers Co., Olean, N. Y., has opened a new office in the Peoples Gas Building, Chicago, in charge of John McClain. The Chicago office will handle Clark engines and compressors in the Chicago area and in the states of Illinois, Indiana, and Michigan.

Mr. McClain has been associated with the gas and oil business for the past 15 years, in a sales and engineering capacity, and is well known to the petroleum trade.

Here and There With Men Who Manufacture Equipment

Blackmer Pump Co., Grand Rapids, Mich., has appointed G. E. Schneider its district representative, with headquarters in Indianapolis, Ind. The territory includes Indiana and Ohio.

E. L. Decker, of Martin-Decker Corp., Long Beach, Calif., is now on an extended trip in Illinois, Kansas, Oklahoma, and Texas in the interests of his company. In Chicago he attended the A.P.I. convention and gave a talk on the care and maintenance of drilling instruments. On his trip he will introduce the new Martin-Decker special weight indicator.

Walter B. Haislup, general sales manager of Diamond Chain & Manufacturing Co., has returned to the general offices in Indianapolis, Ind., after making a tour of the Mid-Continent area with John L. Wamsley, oil country manager.

Combustion Engineering Co., Inc., has opened a branch office in the Martin Building, Birmingham, Ala., under the direction of J. B. Emory as district manager, assisted by W. E. Johnson.

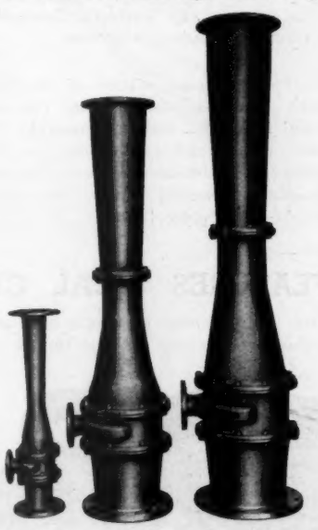
J. E. Elliott, president of the Elliott Core Drilling Co., Los Angeles, Calif., has returned from an extended trip to South America. He made the entire journey by air, visiting every important oil field and many of the wildcats in Venezuela and Colombia.

Gaso Warehouse Stocks in Texas

The Gaso Pump & Burner Manufacturing Co., of Tulsa, now is maintaining complete warehouse stocks of Gaso pumps and parts at the warehouses of the Buda Engine & Equipment Co. in Houston, Longview, and Odessa, Tex. There is no change in the company's policy of direct selling through its own field organizations. Gaso stocks are being carried at these strategic Texas points to make them available in Texas on short notice.

Oil-Tanker Compartments Are Freed of Gas by Exhauster

A steam-jet exhauster, designed to free oil-tanker compartments of gas immediately upon discharge of the cargo, is one of the new products of Shand & Jurs Co., Berkeley, Calif., long identified with the manufacture of petroleum tank fittings. The new exhauster is essentially a steam vacuum pump, designed not for high vacuum, but rather for large carrying capacity and minimum steam consumption. It is manufactured in three sizes 4-, 10- and 12-inch having net capacities of 60,000 to 750,000 cubic feet per hour. This gives a quick and complete renovation of the air in a tank compartment with no consideration of or dependence upon wind conditions.



Marsh Buggy Defies Swamps and Other Difficult Terrain

The 1939 line of all-wheel-drive trucks manufactured by Marmon-Herrington Co., Indianapolis, Ind., includes an improved model of the all-wheel-drive marsh buggy, introduced last summer. Designed to haul passengers and equipment where it has been impossible to go before, the special marsh buggy's performance is as remarkable as its appearance. Transportation engineers, oil men, builders of dams and break-water projects, water works systems and other difficult jobs through deep mud, reed-covered marshes—places where there is apparently "no bottom"—have long felt the need for such a vehicle. Many home-made devices have been rigged up on the job for emergency use, but the Marmon-Herrington special marsh buggy is said to be the first commercial unit of its kind. The marsh buggy is now a regular production unit in the Marmon-Herrington line, the latest consignment going to Asia Minor.

Fundamentally, the marsh buggy is a Marmon-Herrington all-wheel-drive Ford truck, especially engineered to accommodate the mounting of four to 10·13.50x24 tires. The number of these enormous tires furnished varies in accordance with the type of terrain in which the vehicle is to operate. For less extreme conditions single tires, front and rear are provided, but for deep and difficult marshland 10 tires are supplied, three on each side in the rear, and two left and two right in the front.

The marsh buggy combines the tractive ability of Marmon-Herrington all-wheel-drive, applied to the enormous tire surface of the 10 big tires, with the "flotation" effect gained by these same big tires. The vehicle, the manufacturers say, seems to paddle its way across marshland which cannot be traversed by boat, men, or animals.

Acquires Red-Rex Rights

Oil City Brass Works, Beaumont, Tex., has acquired exclusive manufacturing and sales rights on the Red-Rex Quick pipe union. Sales will be handled by the company's own field organization, headed by B. D. Todd, manager. L. H. Kennon will be in charge of sales in the Houston district. Distribution of the product will be made through supply dealers exclusively.

Iverson Warehouse in Salem

Iverson Tool Co., Tulsa, has opened a warehouse in Salem, Ill., with stocks of cable and rotary drilling tools and a complete line of oil well supplies, besides a fishing-tool rental service. The new store is in charge of Roy E. Busch, assisted by W. A. Clarence, George C. Lively, and E. Megenity.

Acme Gas-Mask Lets Wearer See and Move About Easily

Acme Protection Equipment Co., Inc., 3603 Liberty Avenue, Pittsburgh, Pa., manufacturer of respiratory protective devices, announces a new No. 5 full-vision snout-type canister gas-mask which embodies improvements in construction.

Outstanding features include full-vision lenses, which enable the wearer to see as well as when not wearing a mask, and a lightweight canister, directly connected to the facepiece, permitting the wearer to move about with freedom.

The mask is recommended for use in low gas concentrations or for short periods in higher concentrations. Canisters are available for protection against practically all poisonous gases.

Ideal Liner-Puller Is Positive In Action and Easy to Center

The Ideal Type CH liner-puller is simple in design, easy to center and quick and positive in action. As shown in the cut, it concentrates a direct pull on the end of the liner. There is no

wedging force or expansion, and the liner is pulled without injury to its inner surface. The pulling nut is made with a roller thrust-bearing for greater ease of operation and travels on an Acme thread. It is provided with wrench holes for a leverage bar or spanner wrench. A small model designed for use with Ideal boiler-feed pumps is identical in construction except for a plain thread and the omission of the roller bearing on the pulling nut.

Bulletins, Booklets and Other Literature for the Trade

International Harvester Co. has just released a sound motion picture, "New Oil Field Methods." Uses to which modern oil-field trucks, tractors and power units are put in drilling wells and producing oil are shown. The film was prepared especially for showings to oil-field producers, schools, colleges, and other interested groups. Prints may be borrowed free of charge by communicating with the company, 180 North Michigan Avenue, Chicago.

Carbide & Carbon Chemicals Corp., 30 East Forty-second Street, New York, announces a folder, "Amines." Known as "Chemical Group Folder No. 10," this publication is the second of a series of pamphlets presenting information on industrial organic chemical families. It describes physical and chemical properties of 14 commercial amines.

International Nickel Co., Inc., 67 Wall Street, New York, has issued bulletin T-9, "Engineering Properties of K Metal," in its series giving technical information on monel, nickel, and nickel alloys.

Four new bulletins issued by Worthington Pump & Machinery Corp., Harrison, N. J., cover: Balanced multistage volute centrifugal pumps, types UW and UX; vertical triplex single-acting power pumps, Figure 1863; hydraulic tube washer for surface condensers; rotary pump Type GEC, for unloading barge or tanker.

"Oil Well Surveys, Their Necessity and Application" is the title of an attractive booklet published by Lane-Wells Co., Los Angeles, Calif. The booklet is sent free to applicants who write on their company letterheads.

Smooth-On Manufacturing Co., Jersey City, N. J., has issued a revised and enlarged edition of the Smooth-On handbook, describing all Smooth-On metal cements and products, illustrating their application by working diagrams.

The fourth annual edition of the 1939 show schedule, which includes national, regional, state and local industrial, trade, commercial, and professional shows and exhibitions, has been released by the Exhibitors Advisory Council, Inc., 122 East Forty-second Street, New York. For nonmembers the price is $4.

New Unit Fills Out Crankcase Capacity Range of Purolators

Motor Improvements, Inc., 365 Frelinghuysen Avenue, Newark, N. J., has completed the crankcase capacity range of its clear oil N-type Puro-

lators with the introduction of Model 29. This type filter removes all solids and discoloration from oil. Purolator N-29 has twice the filter capacity of the next largest type, N-19.

The N-29, the manufacturer says, will prove entirely efficient on Diesels having crankcase capacities of 14 to 24 quarts. When installation is on gasoline motors, crank capacities of 14 to 24 quarts are filtered.

Improvements Increase Value of Ball Valve Seat Grinder

The Ball Valve Seat Grinder Co., 204 North Beech Street, Syracuse, N. Y., has announced im-

provements on its ball valve seat grinder which now, according to the manufacturer, can easily reclaim 200 seats in a day. The improvements consist of a micrometer fixture and gauge for all sizes of balls from 0 to 2-inch, instead of a separate gauge for each size; the addition of special abrasive wheels for the commonly used sizes of ball valve seats, namely, ⅝-, ¾-, 11/16-, ⅞-, 1-, 1⅛-, 1¼-, 1⅜-, 1½-, 1¾-, and 2-inch. The machine will also grind seats requiring 2½-inch balls for which a separate gauge is furnished. All sizes given are ball sizes.

Other improvements have been made to gain accuracy in grinding. The machine is equipped with either an electric- or gas-driven motor.

The new micrometer gauge, said by the manufacturer to be especially efficient and economical, will permit the operator to fit any ball to the seat whether the ball is under- or oversize.

QUIET, SMOOTH OPERATION FEATURES IDEAL CHAIN

The Ideal No. 3⅛ pitch rotary chain for the growing requirements of speed and load in rotary drilling is described in Bulletin No. 211 recently issued by National Supply Co. This chain is made in single and double width to A.P.I. standards. It is designed to operate on machine-cut tooth sprockets. Since these are made with the same precision as the chain, the resulting operation of the two is quiet and smooth, and contributes to the length of service.

The No. 3⅛ pitch single-width chain has an ultimate strength of 115,000 pounds, and is used to drive rotary tables, cat-shafts and other like requirements. The chain is said by the manufacturers to have an ultimate strength of 230,000 pounds, and is used for engine and heavy-duty drawworks drives.

Beamless Pumping Unit Runs on Eccentric-Lift Principle

Jim Henry and Roy Downing, 1509 South Quannah Avenue, Tulsa, announce the D. & H. beamless pumping unit. The unit operates on the eccentric-lift principle and may be powered with

either an electric motor or internal-combustion engine. Power is transmitted by V-belts to a helical-type gear-reduction unit. The eccentric is connected by a heavy shaft, and the counterbalance is placed on the opposite side of the reduction unit.

The eccentric provides a double track for the bearings. Ball bearings are used here as well as for the straight-lift guide. The manufacturers state that straight lift is assured and that the eccentric provides smooth motion for the rods.

The unit is of welded steel construction throughout. For servicing the well the unit is skidded to one side by use of a crank-operated screw. Seven sizes will be manufactured for pumping wells 150 to 10,000 feet deep.

Walter Swank in Tulsa for Atlas

Walter Swank, who has been specializing in machinery sales for Atlas Supply Co. in Gladewater, Tex., for the past two years, has been transferred to the Tulsa office as sales engineer. Mr. Swank, who graduated in engineering at Texas A. and M. College in 1931, has had a varied experience in the construction and oil industries. He was three years with Gifford-Hill & Co., Dallas, Tex., as an engineer on road and bridge construction. He then spent two years with the motor division of Allis-Chalmers Manufacturing Co., Milwaukee, Wis., before joining Atlas in January, 1936.

Chrysler Offers Diesel Engine for Its 3-Ton Dodge Trucks

After a decade of experimentation, Dodge Truck Division of Chrysler Corp. has announced a Dodge-built Diesel engine for its 3-ton trucks. The new engine is a full compression-ignition Diesel of 331 cubic inch displacement, with torque and power ratings of 226 pound-feet at 1,000 r.p.m. and 95 hp. at 2,600 r.p.m. A 14.5 to 1 compression ratio is used.

The engine is of the familiar six-cylinder, four-stroke cycle type with 3¾-inch bore and 5-inch stroke. Its general dimensions, mountings and crankcase structure are identical with those of the Dodge 3-ton truck gasoline engine, which permits economies in the manufacture and chassis installation of the engine. The design embodies such features as full-length water-jackets, valve-seat inserts, bypass thermostat and chain-driven camshaft. The cylinder block is of nickel-moly alloy.

Tin-plated steel strut autothermic pistons are employed in the new engine, permitting extremely close piston fits. Pistons are 5 15/32-inch long (plus the height of the displacer cast integral on top of the piston) to achieve good crosshead effect. Three compression and two oil rings are used, the upper ring being five-eighths inch below the top of the piston, so that it is always in contact with the water-jacketed portion of the cylinder wall. The rings are tin-plated to prevent scuffing during the break-in period. Seven precision-type replaceable main bearings, 3 inches in diameter, are employed, giving 36.89 square inches of projected bearing area. Copper-lead bearing material is used in conjunction with inducton-hardened crankshaft

Crane Co. Marketing Valves in New and Informative Cartons

Certain brass valves up to the 1-inch size are being marketed by Crane Co. in blue-and-orange cartons, which fill an educational as well as a sales function. Besides identifying the contents on the ends of the carton, the sides are used to assist the customer in using the product to the best advantage. The services for which the valve is intended and the safe working pressures for each class of service are clearly indicated. There also is a simplified sectional view of the valve so that the valve parts can be identified readily.

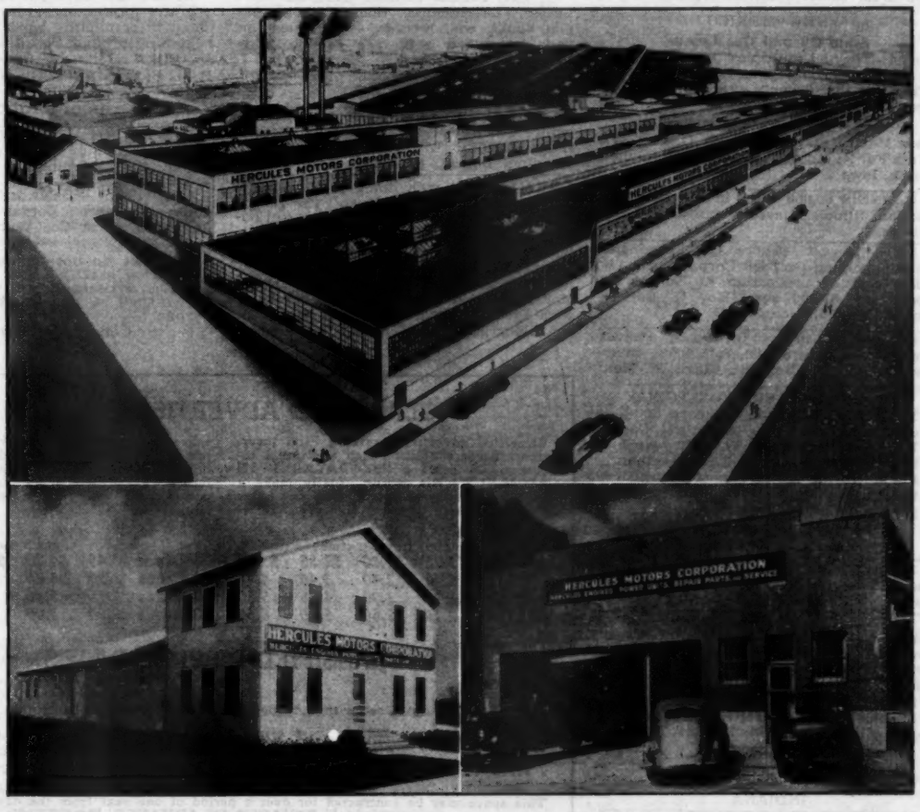
Besides the attractiveness of the package, the company points out that the carton makes for ease in handling and storing the product and for its protection. The container is being introduced by salesmen working out of the 134 Crane branches.

HERCULES MOTORS OPENS BRANCH STORE IN HOUSTON

Carrying out a program of sales and service expansion in the Mid-Continent oil field, Hercules Motors Corp., Canton, Ohio, has opened a branch store in Houston, Tex., at 1319 Conti Street. Like the Kilgore, Tex., branch opened several months ago, it will carry a complete stock of Hercules engines, power units and replacement parts.

Hercules specializes in the design and production of gasoline and Diesel engines, exclusively. The line includes a wide variety of gasoline, gas and Diesel engines and power units, ranging from 4 to 200 horsepower. Both 4- and 6-cylinder engines and power units are available in the line of high-speed, heavy-duty Diesel engines.

The company plans additional branches in the Mid-Continent field. All Mid-Continent sales and service activities are under the direction of A. B. Wehling, who has established headquarters at the new Houston unit, assisted by a staff of sales engineers and service mechanics.



Top, factory and general offices, Canton, Ohio; lower left, Kilgore branch; lower right, new Houston branch

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Leases and Drilling Blocks

LEASES—East Texas, La., South Ark. 20 acres up, dollar acre up.—Owners—Address Attorney, Box 1122, Little Rock, Ark.

DRILLING deals wanted 50,000 acres Southern Illinois in and around production area. Elmer Gant, Anna, Illinois.

NEW MEXICO
State Oil and Gas Leases
Forty acres and multiples thereof at $6.00 to $30.00 per forty in the Hot Spots. Write for list. Twenty years in the business and not a complaint.
HARRY S. WRIGHT
New Mexico State Lessee, P. O. Box 347, Santa Fe, N. M., or P. O. Box 166, Council Bluffs, Iowa.

ILLINOIS 60,000 acres in and near production. Illinois Minerals Company, Cairo, Illinois.

NEW 10-year 40-acre Oil Lease Lea County, joining Gulf Oil Corp., apprx. 1½ miles east of production in Eunice Oil Pool, only $10.00 acre. Roy G. Barton, Hobbs, New Mexico.

SACRIFICE 40-acre Oil Lease, Chaves County, for only $10.00, full price. Guarantee title. P. O. Box 191, Clovis, N. Mex.

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HAVE BLOCK OF 4000 ACRES
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3,000 ACRES Leases and Royalties Illinois Basin—20 Acres up. ELTON, BECK, Herrick. Illinois

WILL sell 55 ac. leases of Sec. 27 and 14, Twp. 3n, Claremont Twp. of Richland Co., Ill. Chosen drlg. site.
G. HEDELIN, Rockford, Illinois.

Leases and Drilling Blocks

PARTY now conducting special geophysical exploration surveys for oil promise is often in contact with drilling block opportunities, leases, production, royalties and sometimes capital for development where favorable conditions exist. P. O. Box 364, Fort Worth, Texas.

NEAR Pure Noble Deep Test 180 A. Sec. 8, 17 3s R1E Carter Co., Okla. 5 yr. lease. Act. Quick. $25 A. Clarence T. Cox, Big Spring, Texas.

WANTED associates with finances to help develop for oil 80 acres San Juan County, New Mexico. Production close by. W. G. Hokett, 2322 N. 9th St., Phoenix, Arizona.

WILL SELL eighth interest in lease, proven shallow oil field for $130 to finance well. Box 262, Claremore, Okla.

ALLEN CO., KY., SHALLOW FIELD
See or write Scott-Raines Operators, Scottsville, Ky. regarding producing leases and drilling blocks in Allen County Oil field.

LIMA Ohio field should show productive sands deeper drlg. Have 3000 ac. block available. Drilling deal. Near refineries. Jules Barnd, Faurot Bldg., Lima, Ohio.

FOR SALE
30 ac. producing royalty in fee; 18-26 N.-16 E. Nowata Co., Okla. Water flood being installed on properties in immediate vicinity. This property will eventually be flooded. Present monthly return (with proration in effect) from $15 to $20. Inspection will convince you of its merits. Forced to raise money. Price $3000.00. M. J. Regan, P.O. Box 206, Coffeyville, Kans.

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PRODUCTION SUPT. Age 44—18 years with two major companies in Mid-Continent fields. I can reduce your operating expense and can take full charge of your production and development. Employed at present and can give the best of references including present employer. Address Box J-781, The Oil and Gas Journal, Tulsa, Oklahoma.

CONNECTIONS WANTED
SALES MANAGER, Salesman Executive, wants connect parties with good or semi-proven acreage, to offer small and moderate investors on Lease, Drill, Sell and Exploit Campaign Policy, enabling investors establish themselves in legitimate oil operation of their own. If you have Deal, I may be your man, being a Live-Wire, Square-Shooter, with Ideas, Initiative, and long oil-selling record. Let's get together. Address: Connections. Box J-790, The Oil and Gas Journal, Tulsa, Okla.

ACCOUNTANT and Tax man holding C.P.A. degree, desires position, preferably with oil company in Tulsa. Now engaged in public practice. 20 yrs. experience. Reliable refs. furnished. Address Box J-791, The Oil and Gas Journal, Tulsa, Okla.

Help Wanted

WE BUY names royalty owners receiving pipe line checks, also stockholders. Box 2603, Tulsa, Oklahoma.

RELIABLE experienced Magnetometer operator, preferably with own instrument, about three months' work in New Mexico, beginning around Feb. 1st. Must have responsible references. State fees. Address P. O. Box 863, Roswell, New Mexico.

Incorporations

DELAWARE CHARTERS: Complete service $35. Submitted forms. Chas. G. Guyer, Inc., Wilmington, Delaware.

CHARTERS — Delaware best, quickest, cheapest, more liberal. Free forms. Colonial Charter Co., Wilmington, Del.

If we do not maintain a classification exactly suited to the type of advertisement you wish to run, we shall be glad to create a fitting one.
Classified Department

Royalties

ANDREW J. BARRETT
The Philtower
Tulsa, Oklahoma.

Brokers—Salesmen

Sell in the most active area in the United States—The Permian Basin of West Texas and Southeastern New Mexico. From the standpoint of royalty investors this area has much to offer. Can supply you with choice non-producing royalties located on geophysical highs. Also drilling blocks, close in acreage to production, or wildcat leases. I maintain my own field men who cover this area for me. All offerings meet the requirements of the Security and Exchange Commission. Inquiries invited.

R. D. BUCKLEY
Paul Brown Bldg., St. Louis, Mo.

Producing and Non-Producing
OIL ROYALTIES
Registered Dealers Only.
GRIMES ROYALTY CO.
Hunt Bldg. Tulsa, Okla.

PRODUCING OIL ROYALTIES
15 years of experience.
L. H. WITWER
703 Kennedy Bldg., Tulsa, Okla.

FOR SALE
Oil and Gas Royalty in the Illinois Basin of West Kentucky.
One-eighth of all oil and gas under 8,000 acres, or more than 12 square miles either as a whole or in part. Located in Hancock County, Kentucky, between Indian Creek and Hawesville faults with eight producing oil and gas formations known to exist. Five of which are producing on four sides of this property. Gas now being produced and marketed from shallow sands. A series of deep wells to be drilled on this property with two drilling outfits now on same and ready to start operations. A gas field producing for more than 40 years from formations 400 feet below the McClosky formation is located 3½ miles east of this property.
For information address royalty owner,
BOX 230, OWENSBORO, KENTUCKY
PHONE 145.
All deals direct with owner, no brokers or exchanges.

Mailing Lists

ROYALTY Lists. Unit Owners. Lists. Stockholders Lists. By states. Oil Industry Mailing List Co., Tulsa Loan Bldg., Tulsa, Oklahoma.

Equipment Wanted

WANTED: 2000—9⅝" OD Field End Colona Casing Protectors. I.T.I.O. Purchasing Dept., Bartlesville, Oklahoma.

Wanted to purchase for dismantling and moving to Alberta, Canada:
A Dubbs or other suitable single or two-coil cracking unit complete with pumps, instruments, etc. capable of 500 to 1,000 barrels throughput daily, or will consider buying suitable pumps, vessels or instruments separately.
Quote location, price and full particulars to
LION OILS LIMITED
Calgary, Alberta

WANTED — Skid Type Swabbing machine. State size, price, condition, also if complete with tools, etc. Valley Steel Products Co., St. Louis, Mo.

CLASSIFIED ADVERTISING RATES

Classified advertising rates: First insertion, 35 cents a line; each additional insertion, 25 cents a line, PAYABLE IN ADVANCE. Six words usually make a line. Count as a word each one-letter word and each group of figures. White-space computed at regular line rate. Allow two extra lines for blind ads. Ads of less than three lines not accepted. No formal acknowledgement is made, and proofs cannot be shown in advance of publication.

	1 time	2 times	3 times	4 times		1 time	2 times	3 times	4 times
3 Lines	$1.05	$1.80	$2.55	$3.30	7 Lines	$2.45	$4.20	$5.95	$7.70
4 Lines	1.40	2.40	3.40	4.40	8 Lines	2.80	4.80	6.80	8.80
5 Lines	1.75	3.00	4.25	5.50	9 Lines	3.15	5.40	7.65	9.90
6 Lines	2.10	3.60	5.10	6.60	10 Lines	3.50	6.00	8.50	11.00

CLASSIFIED DISPLAY RATES

Classified Display is set with a border and may be used in one or two column sizes.

1 Inch	1 time	$5.00
1 Inch	13 times	4.50 per inch
1 Inch	26 times	4.00 per inch
1 Inch	52 times	3.50 per inch

This space may be contracted for over a period of one year from the date of the first insertion and is PAYABLE IN ADVANCE, MONTHLY.

We reserve the right to withhold all advertising of questionable character. To avoid delay be sure to send remittance with copy. We will set your ad in the smallest amount of space possible and refund all overpayments. One-time insertions will not be run until fully paid. Forms close MONDAY NOON before each issue date.

THE OIL AND GAS JOURNAL
Tulsa, Oklahoma

CLASSIFIED ADVERTISING

For Sale—Equipment For Sale—Equipment For Sale—Equipment

PIPE—STEEL STORAGE TANKS—REFINERY EQUIPMENT

75,000 ft.—2½" line pipe-T&C—5.75 lbs. 30,000 ft.—6" line pipe-T&C—24 lbs.
100,000 ft.—4" line pipe-T&C—10.79 lbs. 100,000 ft.—6" line pipe-T&C—19 lbs.

150—80,000 bbl. tanks, quoted cut down and loaded on car; or reerected on customers' grade any location

PIPE AND TANKS — CASH OR CREDIT

COMPLETE STOCK OF REFINERY EQUIPMENT — SEND US YOUR INQUIRIES

SONKEN-GALAMBA SUPPLY COMPANY

W. C. Berry or H. J. Galamba, Riverview at Second, Kansas City, Kansas

Robt. W. Duden, 2100 S. Union, Tulsa, Oklahoma

FOR SALE: At our Oklahoma City Warehouse Model D48 Muskogee Iron Works long line well servicing unit powered by HXE Hercules engines mounted on No. 55 truck. I.T.I.O., Bartlesville, Oklahoma.

FOR quick sale, a bargain in two Lufkin 6⅛" pumping units complete. Also other oil field equipment. P. C. Wade, P. O. Box 1986, Houston, Texas. Telephone Hadley 6544.

FOR SALE

Over 75,000 feet 10¾" OD Line Pipe. Cleaned. Stacked Walton, Indiana. Priced for quick sale.

STANDARD OIL FIELD SUPPLY CO.
P. O. Box 863 Houston, Texas

25 K.W. and 40 K.W. Gas Engines, 220 volts, D.C. Two 100 K.W. Gas Engine-Generator Sets, 220 volts, D.C. 7x6 Ingersoll-Rand ER-1 Air compressor. Six-inch Oster Pipe Threading Machine. Also large stock of lathes, pipe machines, milling machines, etc. Send for our list.

Terms to suit.

CINCINNATI MACHINERY & SUPPLY CO.
26 West 2nd St. Cincinnati, Ohio.

FOR SALE: At Oklahoma City 10 United Iron Works conical exhaust pots cheap. I. T. I. O., Bartlesville, Oklahoma.

ONE Power Driven Rig Complete: Consisting of 1—Wilson Giant Draw Works w/ 1—7¼ x 10" Type FXK Gardner-Denver Power Pump w/ Air Chamber, Powered by 2— Type PA 100 HP International Motors, 2750' of 4½" OD Acme Full Hole Drill Pipe w/ Tools, Practically New. The Globe Supply Company, Box 761, Shreveport, Louisiana.

FOR sale cheap: At Oklahoma City approximately 1300 8" standard Line pipe couplings with dutchmen. I. T. I. O., Bartlesville, Oklahoma.

FOR SALE — MAGNETOMETER—Like new—Cost nearly $1,000.00, will sacrifice for $250.00 Cash or terms to responsible parties. B. H. Hilburn, Gulf States Building, Dallas, Texas.

TRACTORS

Government crawler type Caterpillars, 5 ton $375, 10 ton $695. Slightly used. Perfect condition.

O. C. EVANS
Mt. Sterling, Ky.

ONE Power Driven Rig Complete: Consisting of 1—Wilson Giant Draw Works w/ 1—7¼ x 10" Type FXK Gardner-Denver Power Pump w/ Air Chamber, Powered by 2—Type PA 100 International Motors, 2750' of 4½" OD Acme Full Hole Drill Pipe w/ Tools, Practically New. The Globe Supply Company, Box 761, Shreveport, Louisiana.

FOR SALE: 1 No. 3 A 6 National Drilling Mch. complete with shear poles. 125 H. P. Waukesha motor and tools from 18" to 5". Murray Tool & Supply Co., 418 Philtower Bldg., Tulsa, Okla. Ph. 4-0144.

FOR SALE. Several sets reconditioned type 29 rams for 9⅝" OD Shaffer control gate. I. T. I. O., Bartlesville, Oklahoma.

FOR SALE: One unitized 7½ Emsco Draw Works. Two unitized Gardner-Denver mud pumps—size 14 x 7¼ x 14. $4,500. Hathaway Co., Santa Fe Springs, Calif.

FOR SALE: 3500 Ft. 5⅞" 20# long-collar 10-thd L. W. Casing in A-1 condition. Price 55c. Located at Bristow. H. E. Korf, Box 564, Bristow, Oklahoma.

FOR SALE—1 Model KS-6-DHK Cardwell Oilwell servicing winch unit, mounted on Mack Truck. Can be inspected O.C. garage. Operating condition now. I.T.I.O., Bartlesville, Oklahoma.

FOR SALE

Any part of 50 clean 8000 gallon noncoiled tank cars, built new in 1926. Cast steel truck sides. Excellent construction and condition. Address Box J-780, The Oil and Gas Journal, Tulsa, Oklahoma.

FOR SALE

20,000 feet 4" seamless drill pipe with tool joints to single. We have a complete line of casing, line pipe and drilling machinery. Also have racked in Kansas 25,000 feet 8" plain end line pipe suitable for high pressure gas or oil line. Wire, phone, or write to

Louisiana Iron & Supply Co.
Shreveport, Louisiana

FOR SALE at Oklahoma City: 9⅝-in. O.D. 8-thread 40-lb. second-hand A.P.I. C seamless steel casing, range 2. I. T. I. O. Co., Bartlesville, Okla.

MEMO

Don't forget to send your Classified Ad today for the Annual International Issue which will be published December 29th.

Classified Department.

For Sale—Equipment

FOR Sale: At Oklahoma City 1—"35" Allis-Chalmers Monarch Crawler Type Tractor with or without power take-off for belt drive. I. T. I. O., Bartlesville, Oklahoma.

DISMANTLING GASOLINE PLANT

5 7'x30' Steel Storage Tanks
1 8'x30' Steel Storage Tank
8 85 HP Bessemer Twin Cylinder Gas Engines
1 40 HP Bessemer Single Cylinder Gas Engine
2 12"x12" Ingersoll-Rand Compressors
3 20"x12" Ingersoll-Rand Vacuum Pumps
And other Equipment.

PRODUCERS PIPE & SUPPLY CO.
Tulsa, Oklahoma
Box 1814 Phone 2-1188; L.D. 501

FOR SALE: 6000'—5" full hole grade D streamlined drill pipe and Kelley. $8,100.00 f o b gondola cars. Hathaway Company, Santa Fe Springs, California.

FOR SALE: Oklahoma City — Approximately 2000' of new 3½" OD 13.3# seamless steel drill pipe less couplings and new Byron Jackson Hopkins anti-friction API non-full hole tool joints. I. T. I. O., Bartlesville, Oklahoma.

Special Services

TUTORSHIP for government Junior Engineer examination.

J. HABEGER, Lamar, Mo.

For Sale—Maps

NEW—FIRST EDITION
OIL & GAS FIELD MAP OF NEW MEXICO

Shows Townships, Ranges, Counties, County seat with elevation and all Oil & Gas Fields to Jan. 1, 1939, in color. Size 30"x 30". Orders placed now will be mailed first week January.

Price $1.00 Postpaid.

ZINGERY OIL MAP COMPANY
Fair Bldg. Fort Worth, Tex.

TWO NEW MAPS

(1) Forest City Basin Map. (2) Structural Geological Map of Western Kentucky. *Write for folder giving complete description and prices.*

E. C. JACOBSON
801 McBirney Bldg. Tulsa, Okla.

Survey Service

OIL FINDING DOWSING METHOD

My deductions a practical method which picks up vibratory reactions emanating from carbo-hydrates. Physico method finds oil, locates faults. Same method discovered great East Texas field also our Watson #2 first producer Wilmington, Calif. field. Employ a man that owns producing wells. I find oil if it exists or no charge. George Miller, 1548 Post, Torrance, California.

I.P.A.A. COMMITTEE

(Continued from Page 12)

1. Some producers of crude in some oil producing states are producing oil from wells in such large quantities as to create underground physical waste to the detriment of the industry, the states in which they are producing and to the nation.

2. Some companies engaged in the production as well as the purchase of crude are prorating stripper wells while at the same time they are producing oil from their own wells in other states in much larger quantities.

3. There are many producing wells where there is lack of ratable taking due to the fact that some purchasing companies are applying pipe line proration.

4. Discrimination in purchases between pools within the same state exists in some oil producing states. This condition is brought about in some of the states through the granting of special allowables.

5. Many unnecessary wells will still continue to be drilled in some oil producing states, which constitutes a most serious problem.

The committee recommended that such steps be taken as necessary, either by cooperation or by law, to accomplish the following essential principles to secure equitable proration under a sound conservation program:

1. That no proration of production shall be applied to stripper wells either through orders of regulatory bodies of the oil producing states or by purchasing companies, and that a market be provided, in the interest of conservation, for the full production from all stripper well pools in order to prevent the premature abandonment of stripper wells.

2. That the additional market for crude petroleum in each of the oil producing states in excess of the market supplied by full production from stripper wells be distributed equitably and without discrimination to all other producing wells in the state and that no special allowables be granted, for the granting of special allowables only brings about discrimination in purchases between pools within a state.

3. That where producers of crude petroleum are producing oil from wells in such large quantities as to create underground physical waste, if there is a conservation law in a state where this is occurring, that the regulatory body of the state take such action as may be necessary to eliminate this waste, and where no conservation law exists that the producers themselves voluntarily curtail their production to such a point as will eliminate waste.

The special study committee, of which 28 members were present at the meeting, will be continued and it adjourned subject to call of the president. The action taken will be reported to the entire I.P.A.A. membership at a special meeting later.

States Should Join Compact, Elliott Roosevelt Says

FORT WORTH, Tex. — A prediction that federal control of the oil industry will result unless the Interstate Oil Compact is given a new lease on life and is joined by all producing states was made in a radio broadcast on December 16 by Elliott Roosevelt.

"The coming of federal control," he said, "would be a sad day for the oil industry."

Mr. Roosevelt said he doubted if one oil man in 100 favored such control, if any other feasible method can be found to solve the problems of overproduction, waste, glutting of the market and unfair competition by the larger and stronger companies.

Index to Advertisers

A

Abercrombie, J. S., Co. 71
Abercrombie Pump Co. .....
Air Reduction Sales Co. 1
Ajax Iron Works .....
Alco Products Division — American Locomotive Company .....
Allis-Chalmers Mfg. Co. .....
Allsteel Products Mfg. Co., The
American Bosch Corporation ...
American Cable Division of American Chain & Cable Co., Inc.
American Cast Iron Pipe Company
American Iron & Machine Works
American Meter Company 4
American Sand-Banum Co., The 90
American Steel & Wire Company
Armstrong Machine Works .....
Athey Truss Wheel Co. .....
Atlas Drop Forge Co. 90
Atlas Imperial Diesel Engine Co. ...
Atlas Powder Company .....
Atlas Supply Co. .....
Auer, C. L., & W. W. .....
Axelson Manufacturing Company

B

Baash-Ross Tool Company .....
Babcock & Wilcox Tube Co., The
Badger & Sons Co., E. B. 46
Bakelite Corporation .....
Baker Oil Tools, Inc. 6
Baldwin-Duckworth Chain Corp. 74
Bantam Bearings Corp. .....
Baroid Sales Company 55
Barret, William M., Inc. .....
Bastian-Blessing Co., The 85
Beaumont Iron Works Co. .....
Beckman, Inc. .....
Bethlehem Steel Co. .....
Bond Lubrication Products Co.
Boston Woven Hose & Rubber Co.
Braden Steel Corporation 42
Bradford Motor Works, Inc. 80
Bradford Supply Company .....
Brewster Company, The .....
Bridgeport Machine Company .. 61
Broderick & Bascom Rope Co. ..
Brown Instrument Co., The ....
Bruning Company, Inc., Charles
Buckeye Traction Ditcher Co., The
Butler Manufacturing Co. .....
Byron Jackson Co. .....

C

Cable, Jo H. .....
Cameron Iron Works, Inc. .....
Carey Company, The Philip ....
Carnegie-Illinois Steel Corporation
Case, J. I., Company .....
Cast Iron Pipe Research Association, The .....
Caterpillar Tractor Co. 35
Chain Belt Co., The .....
Chaplin-Fulton Mfg. Co., The ..
Chapman Valve Mfg. Co., The ..
Chemical Process Co., Inc., The
Chicago Bridge & Iron Company
Chiksan Oil Tool Co., Ltd. .....
Clark Brothers Company .....
Classified Advertising 110-111
Cleveland Trencher Company ...
Climax-Molybdenum Company ..
Coffing Hoist Co. .....
Columbia Steel Company .....
Columbian Steel Tank Co. .....
Continental National Bank of Fort Worth .....
Continental Oil Co. .....
Continental Supply Company, The 36
Cooper, Fred E. 51
Cooper-Bessemer Corp., The ....
Coppus Engineering Corp., The
Core Laboratories, Inc. .....
Crane Co. .....
Cummins Engine Co. .....
Curtin, W. H., & Co., The .....

D

Darling Valve & Mfg. Co. .....
Davis Regulator Co. .....
Dayton Rubber Mfg. Co., The ..
Diamond Chain & Manufacturing
Dodge Mfg. Corporation .....
Doheny Stone Drill Co. .....
Dowell, Incorporated .....
Dragon Mfg. Co., The 80
Dresser, S. R., Mfg. Co. .....
Du Pont de Nemours & Co., Inc.

E

Eagle Picher Lead Co. .....
Eastman Oil Well Survey Co. ...
Economy Electric Lantern Co. ..
Edward Valve & Mfg. Co., The ..
Emsco Derrick & Equipment Company 44
Ensign Carburetor Company, Ltd. 74
Ethyl Gasoline Corporation .....
Evansville Chamber of Commerce

F

Failing, George E., Supply Company .....
First National Bank of Dallas ...
First National Bank of Fort Worth.
First National Bank in Houston .
First National Bank & Trust Co. of Tulsa, The 48
Fisher Governor Company .....
Fluor Corporation, Ltd., The ....
Foote Bros. Gear and Machine Corporation .....
Ford Motor Co. .....
Fort Worth Chamber of Commerce.
Fort Worth Clearing House Association .....
Fort Worth National Bank, The .
Foster Wheeler Corp. .....
Four Wheel Drive Auto Co., The.
Foxboro Co., The .....
Franks Mfg. Co. .....
Frick-Reid Supply Corporation . 38
Frost National Bank .....

G

Gardner-Denver Company .....
Garlock Packing Company, The .
Gaso Pump & Burner Mfg. Co. ..
Gasoline Products Co., The .....
Gates Rubber Co., The .....
Gatke Corporation .....
General American Transportation Corporation—Terminal Division
General Electric Company .....
General Motors Truck .....
General Paint Corporation .....
General Power, Inc. .....
Geological Scientific Service Company .....
Geophysical Service, Inc. .....
Gilmer Company, L. H. .....
Gilmore Wire Rope Division of Jones & Laughlin Steel Corporation .....
Girdler Corporation, The .....
Goodall Rubber Co. .....
Goodrich Co., B. F., The 3
Goodyear .....
Gott, H. P., Mfg. Co. .....
Goulds Pumps, Inc. .....
Graver Tank & Mfg. Co., Inc. ...
Gray Processes Corporation, The.
Grossrohr-Verband G.m.b.H. ....
Guiberson Corporation .....
Gulf Oil Corp. .....
Gulf States Utilities Co. .....
Gustin-Bacon Mfg. Co. .....

H

Haering & Co., Inc., D. W. .....
Halliburton Oil Well Cementing Co. .....
Hanlon-Buchanan, Inc. .....
Happy Belting Company .....
Harnischfeger Corporation .....
Harrisburg Steel Corporation
Hazard Wire Rope Division of American Chain & Cable Co., Inc. .....
Hercules Tool Company .....
Hewitt Rubber Corp. .....
Hill-Hubbell & Co. .....
Hoard Exploration Company ....
Houston Lighting & Power Company .....
Hughes Tool Co. ..... Back Cover
Humble Oil & Refining Co. .....
Hunt Tool Company .....
Hydril Co. .....

I

Independent Exploration Company
Ingersoll-Rand .....
International Derrick & Equipment Co., The .....
International Filter Co. 53
International Geophysics, Inc. .. 54
International Harvester Co. .....
International Nickel Company, Inc., The .....
International Petroleum Exposition .....
International Supply Co. .....

J

Jarecki Manufacturing Company . 2
Jensen Brothers Manufacturing Co. .....
Jerguson Gage & Valve Co. .....
Johns-Manville Corporation .....
Johnston, M. O., Oil Field Service
Jones & Brooks, Inc. .....
Jones Company, S. M. .....
Jones & Laughlin Steel Corporation .....

K

Kane Boiler Works, Inc. .....
Kellogg, M. W., Company, The ..
Kennedy Valve Mfg. Co., The ...
Kerotest Manufacturing Co. .....
Keuffel & Esser Co. .....
Key Company .....
Keystone Driller Co. .....
Kibele Manufacturing Co. .....
Kinley Co., M. M. .....
Kinzbach Tool Co. .....
Kobe, Incorporated .....
Kropp Forge Company .....
Krupp .....

L

Laminated Shim Co., Inc. .....
Landis Machine Co., The .....
Lane-Wells Co., The .....
Larkin Packer Company, Inc. Inside Back Cover
Layne and Bowler Co., The ....
Layne & Bowler, Inc. .....
Leland Equipment Co. .....
Lennox Hotel 80
Le Roi Company .....
Leschen, A., Sons Rope Co. .....
Lincoln Electric Company, The .
Linde Air Products Co., The ...
Line Scale Co., Inc. .....
Link-Belt Company .....
Lockheed Aircraft Corporation .
Lone Star Cement Corporation . 64
Lucey Products Corporation ....
Ludlow Valve & Mfg. Co., The ..
Lufkin Foundry & Machine Co. .
Lufkin Rule Co., The .....
Lummus Co., The .....
Lunkenheimer Co., The .....

Mc

McGregor Working Barrel Company .....
McKissick Products Corp. .....

M

MacClatchie Manufacturing Company .....
Macwhyte Co. .....
Magnolia Airco Gas Products Co. 1
Maloney Tank Mfg. Co. Front Cover
Manhattan Rubber Mfg. Division
Mannesmannrohren Werke .....
Marmon-Herrington Co., Inc. ....
Marsh, James P., Corp. .....
Martin-Decker Corp. .....
Maschinenfabrik Imperial G.m.b.h.
Mathey Machine Works, C. A. ...
Mauser, K.-G. .....
Maxim Silencer Co., The .....
Mayfair Hotel .....
Medart Company .....
Meehanite Research Institute ...
Merco Nordstrom Valve Co. .....
Meria Tool Company .....
Metric Metal Works 4
Midco Tool & Supply Co. .....
Mid-Continent Supply Co. .....
Midwest Piping & Supply Company, Inc., The .....
Miller Sand Pump Co., The .....
Mission Mfg. Co., The .....
Monsanto Chemical Company ....
Motor Improvements, Inc. .....
Murcell, Inc., U. C. .....
Murphy Diesel Company, Ltd. ...
Muskogee Iron Works .....

N

National Airoil Burner Company .
National Bank of Tulsa .....
National Supply Co., The 63
National Transit Pump and Machine Co. .....
National Tube Co. 58-59
Naylor Pipe Company .....
New Bedford Cordage 70
New Deal Specialty Co., The ...
Newman, Hender & Co., Ltd. ...
Novo Engine Co. .....
Nugent & Co., Inc., Mfrs., Wm. W.

O

O'Bannon Co., Walter .....
Oil Center Tool Co. 70
O.C.S. Mfg. Co., The .....
Oil Equipment Manufacturing Co.
Oil Industry Mailing List Co. 80
Oil Well Mfg. Corp. 70
Oil Well Supply Company 41
Oil-World Exposition, Inc. .....
O.K. Machine & Manufacturing Co.
Oliver United Filters, Inc. .....
Osage Metal Company .....
Oster Manufacturing Company ..
Otis Pressure Control, Inc. .....
Oxweld Acetylene Company ....

P

Page Fence Association .....
Page Steel & Wire Division of American Chain & Cable Co.
Parkersburg Rig & Reel Co., The
Parkhill-Wade .....
Patterson-Ballagh Corporation ..
Peerless Pump Division of Food Machinery Corp. .....
Penberthy Injector Co. .....
Pennsylvania Grade Crude Oil Association .....
Perco, Inc. .....
Petroleum Advisers, Inc. .....
Petroleum Electric Power Club . 57
Petroleum Publishing Company, The 47
Petroleum Rectifying Company . 45
Philadelphia Gear Works .....
Pittsburgh-Des Moines Steel Company .....
Pittsburgh Equitable Meter Co. .
Pittsburgh Steel Company .....
Plymouth Cordage Co. 89
Polymerization Process Corporation, The .....
Pomona Pump Co. .....
Portable Rig Co. .....
Preformed Wire Rope .....
Prest Machine Works Co. .....
Prest-O-Lite Company, Inc., The.
Price Co., H. C. .....
Pritchard, J. F., & Co. .....
Pure Oil Co. .....

R

Reading-Pratt & Cady Division of American Chain & Cable Co., Inc. .....
Rector Well Equipment Co., Inc.
Reda Pump Co. .....
Reed Roller Bit Company .. 52-71
Regan Forge & Engineering Co. . 71
Reid, Joseph, Gas Engine Co. ...
Reilly Tar & Chemical Corporation
Republic Rubber Division of Lee Rubber & Tire Corp. .....
Republic Steel Corp. .....
Robidoux Hotel 85
Ryerson & Son., Inc., Joseph T.

S

San Antonio, City of .....
Schlumberger Well Surveying Corporation .....
Security Engineering Co. .....
Seismograph Service Corp. .....
Shafer Bearing Corporation ....
Shaffer Specialty Co., The .....
Shaffer Tool Works .....
Shand & Jurs Co. .....
Sharples Corporation, The .....
Shell .....
S.K.F. Industries, Inc. .....
Skinner Co., M. B. .....
Smith, A. O., Corporation .....
Smith, A. O., Corporation, Meter Division .....
Smith Company, E. M. .....
Smith, H. C., Oil Tool Co. 70
Smith Company, Howard 71
Smith Meter Co. .....
Smooth-On Mfg. Co. .....
Socony-Vacuum Oil Co. .....
South Chester Tube Co. .....
Southwestern Gas & Electric Company .....
Spang Chalfant, Inc. .....
Spang & Company .....
Sperry-Sun Well Surveying Co. .
Standard Brake Lining Co. 70
Star Drilling Machine Company
Stark, Ralph, Inc. 80
Stearns-Roger Manufacturing Co..
Sterling Engine Co. .....
Sturtevant Company, B. F. .....
Subterrex .....

T

Taylor Forge & Pipe Works ....
Taylor Instrument Companies ..
Technical Oil Tool Corporation .
Texaco Development Corporation
Texas Electric Service Company.
Texas Iron Works .....
Texas Steel Co. .....
Thermoid .....
Thornhill-Craver Co., Inc. .....
Timken-Detroit Axle Co. .....
Timken Roller Bearing Company
Timken Roller Bearing Company —Steel and Tube Division ....
Toledo Pipe Threading Machine Co., The .....
Tretolite Co. .....
Trinity Portland Cement Company .....
Tube Turns, Inc. 25
Tulsa Boiler & Machinery Co. ..
Tulsa Chamber of Commerce ..
Twin Disc Clutch Co. .....

U

Union Carbide & Carbon Corporation .....
Union Carbide Sales Company ..
Union Wire Rope Corporation Inside Front Cover
Unit Rig & Equipment Company.
United Motors Service, Inc. .....
United States Rubber Company
United States Steel Corp., Subsidiaries 41-58-59
United States Steel Products Company 41-58-59
Universal Atlas Cement Co. .....
Universal Exploration Co. 76
Universal Oil Products Co. 26

V

Visco Products Company .....
Vogt, Henry, Machine Co. .....

W

Wall Rope Works, Inc. .....
Walworth Company .....
Warren Petroleum Corporation ..
Watson-Stillman Co., The .....
Waukesha Motor Co. .....
Well Equipment Mfg. Corp. .....
Westinghouse Electric & Mfg. Co.
Wheatley Bros. .....
Wheeling Machine Products Co. .
Wheland Co., The .....
Whitney Chain & Mfg. Co., The . 33
Wickwire Spencer Steel Company
Williams & Co., J. H. .....
Wilson Manufacturing Co. .....
Wilson Welder & Metals Co., Inc.
Witte Engine Works .....
W-K-M Company, Inc. .....
Worthington Pump & Machinery Corporation .....
Wyatt Metal & Boiler Works ...

Y

Young Engine Corp. .....
Young Radiator Company .....
Youngstown Sheet & Tube Co. ..

Z

Zink Burners, John .....

The Oil Man's Calendar appears on Page 20